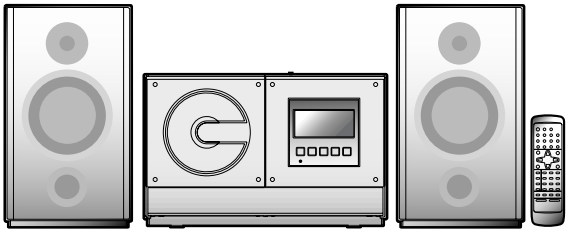
SHARP SERVICE MANUAL

No. S2112SDCX1H//



SAVING ENERGY STAND-BY POWER CONSUMPTION 0.6W

COMPACT disc DIGITAL AUDIO

R·D·S EON MDLP Mini Disc

1-BIT DIGITAL AUDIO SYSTEM

MODEL SD-CX1H(BL) SD-CX1H(GR)

SD-CX1H 1-Bit Digital Audio System consisting of SD-CX1H (main unit) and CP-CX1H (speaker system).

• In the interests of user-safety the set should be restored to its original condition and only parts identical to those specified should be used.

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SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

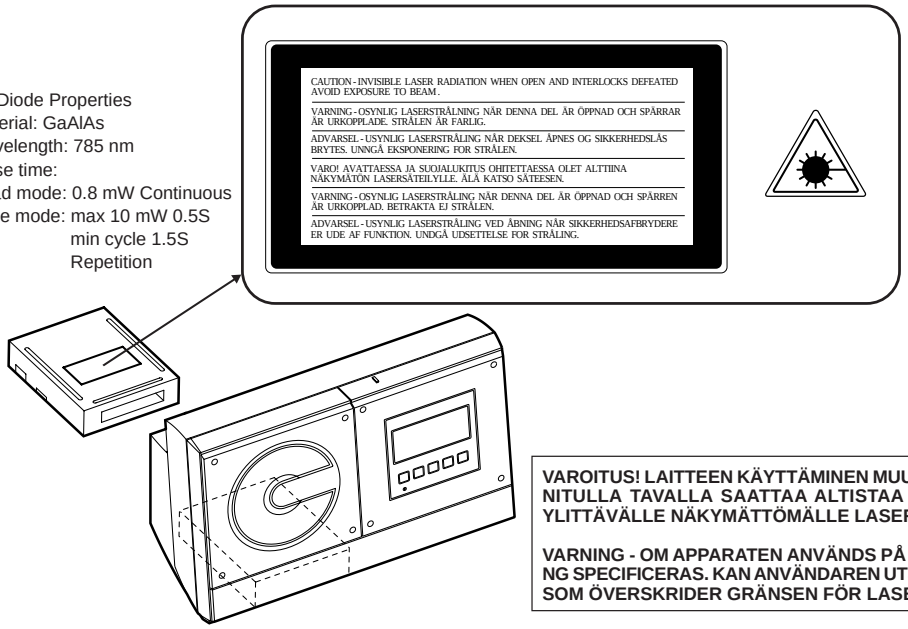
SAFETY PRECAUTION OF MD SECTION FOR SERVICE MANUAL

WARNINGS

The AEL (Accessible Emisson Level) of the laser power output is less than class 1 but the laser component is capable of emitting radiation exceeding the limit for Class 1. Therefore it is important that the following precautions are observer during servicing to protect your eyes against exposure to the laser beam.

1) When the unit case cover is removed and LOADING SW (SW 1956) is turned on and then PLAY SW (SW 1954 mechanism PWB) is turned on in a few second.
   The laser will light for several second to detect a disk.
2) The laser power output of the pickup unit and replacement service parts are all factory pre-set before shipment.
   Do not attempt to re-adjust the laser pickup unit during replacement or servicing.
3) Under no circumstances stare into the pickup lens at any time.
4) If laser optical unit becomes faulty, replace the complete laser optical unit.
5) CAUTION-Use of controls or adjustments, or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Laser Diode Properties
- Material: GaAlAs
- Wavelength: 785 nm
- Pulse time:
  Read mode: 0.8 mW Continuous
  Write mode: max 10 mW 0.5S
  min cycle 1.5S
  Repetition


CAUTION - INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED AVOID EXPOSURE TO BEAM.
VARNING - OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRRAR ÄR URKOPPLADE. STRÅLEN ÄR FARLIG.
ADVARSEL - USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.
VARO! AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTÖN LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING - OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.
ADVARSEL - USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSETTELSE FOR STRÅLING.

VAROITUS! LAITTEEN KÄYTTÄMINEN MUULLA KUIN TÄSSÄ KÄYTTÖOHJEESSA MAINITULLA TAVALLA SAATTAA ALTISTAA KÄYTTÄJÄN TURVALLISUUSLUOKAN 1 YLITTÄVÄLLE NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE.

VARNING - OM APPARATEN ANVÄNDS PÅ ANNAT SÄTT ÄN I DENNA BRUKSANVISNING SPECIFICERAS. KAN ANVÄNDAREN UTSÄTTAS FÖR OSYNLIG LASERSTRÅLNING, SOM ÖVERSKRIDER GRÄNSEN FÖR LASERKLASS 1.

VARO !	Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.
VARNING!	Osynlig laserstralning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.

Precaution to be taken when replacing and servicing the laser pickup.
The following precautions must be observed during servicing to protect your eyesvagainst exposure to the laser.
Warning of possible eye damage when repairing:
If the AC power plug is connected when the inner cover of the unit is removed, the laser will light up during focus access (about 1 second) (Fig. 2-1).
During this operation, the laser will leak from the opening between the magnetic head and cartridge holder (Fig. 2-2).
In order to protect your eyes, you must not look at the laser during repair.
Before repairing, be sure to disconnect the AC power plug.

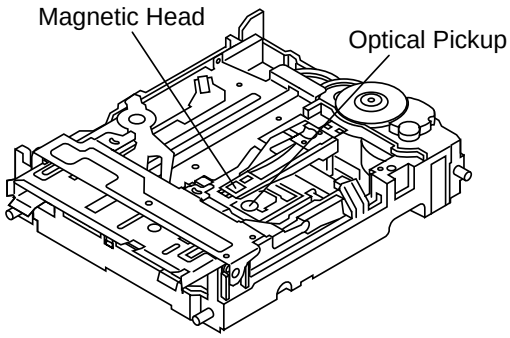


Figure 2-1

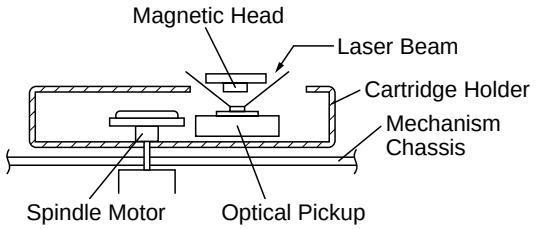


Figure 2-2

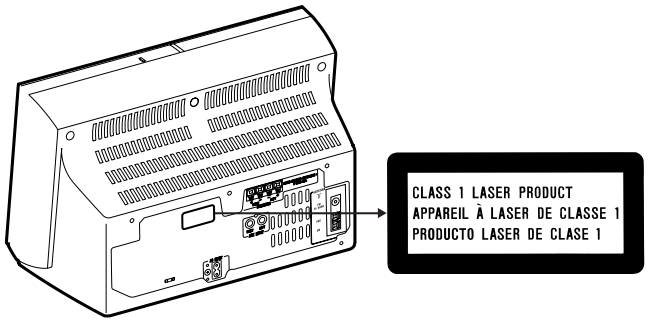
SAFETY PRECAUTION OF CD SECTION FOR SERVICE MANUAL

WARNINGS

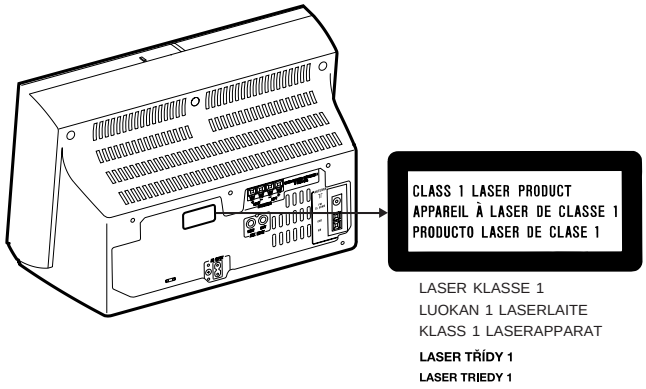
Precaution to be taken when replacing and servicing the Laser Pickup.

The AEL (Accessible Emission Level) of Laser Power Output for this model is specified to be lower than Class 1 Requirements. However, the following precautions must be observed during servicing to protect your eyes against exposure to the Laser beam.

(1) When the cabinet has been removed, the power is turned on without a compact disc, and the Pickup is on a position outer than the lead-in position, the Laser will light for several seconds to detect a disc. Do not look into the Pickup Lens.
(2) The Laser Power Output of the Pickup inside the unit and replacement service parts have already been adjusted prior to shipping.
(3) No adjustment to the Laser Power should be attempted when replacing or servicing the Pickup.
(4) Under no circumstances look directly into the Pickup Lens at any time.
(5) CAUTION - Use of controls or adjustments, or performance of procedures other than those specified herein may result in hazardous radiation exposure.



(For U.K.)



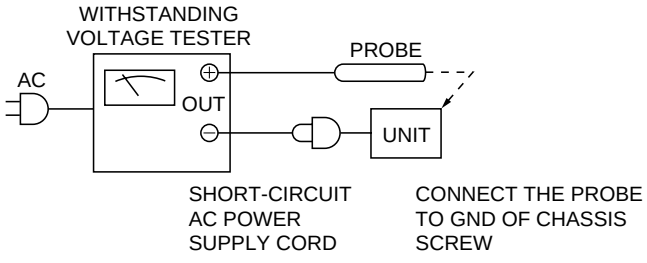
(Except for U.K.)

IMPORTANT SERVICE NOTES (FOR U.K. ONLY)

Before returning the unit to the customer after completion of a repair or adjustment it is necessary for the following withstand voltage test to be applied to ensure the unit is safe for the customer to use.

Setting of Withstanding Voltage Tester and set.

Set name	set value
Withstanding Voltage Tester	
Test voltage	4,240 VPEAK 3,000 VRMS
Set time	6 secs
Set current (Cutoff current)	4 mA
Unit	
Judgment	
OK: The “GOOD” lamp lights. NG: The “NG” lamp lights and the buzzer sounds.	



FOR A COMPLETE DESCRIPTION OF THE OPERATION OF THIS UNIT, PLEASE REFER TO THE OPERATION MANUAL.

SPECIFICATIONS

SD-CX1H

■ General

Power source	AC 230 V, 50 Hz
Power consumption	Power on: 42 W Power stand-by: 0.6 W (*)
Dimensions	Width: 330 mm (13") Height: 208 mm (8-3/16") Depth: 190 mm (7-1/2")
Weight	5.0 kg (11 lbs.)

(*) This power consumption value is obtained when the demonstration mode is cancelled in the power stand-by mode. Cancel the demonstration mode.

■ Amplifier

Amplification system	64fs 1-bit switching (Remarks: fs = 44.1 kHz)
Rated output power	RMS: 40 W (20 W + 20 W) (DIN 45 324)
A/D noise shaping	7th-order ⊿Σ (delta - sigma) modulation
Output terminals	Speakers: 6 ohms Headphones: 16 - 50 ohms (recommended: 32 ohms)
Input terminals	Auxiliary: 500 mV/47 kohms

■ CD player

Type	1-disc vertical compact disc player
Signal readout	Non-contact, 3-beam semiconductor laser pickup
D/A converter	1-bit D/A converter
Frequency response	20 - 20,000 Hz
Dynamic range	90 dB (1 kHz)

■ MiniDisc

Type	MiniDisc Recorder
Signal readout	Non-contact, 3-beam semiconductor laser pickup
Rotation speed	400 - 900 rpm CLV, Approx.
Error correction	ACIRC (Advanced Cross Interleave Reed-Solomon Code)
Quantization	20-bit linear (A/D converter)
Coding	ATRAC (Adaptive TRansformed Acoustic Coding), ATRAC 3
Sampling frequency	44.1 kHz
Recording method	Magnetic modulation overwrite method
Frequency response	20 - 20,000 Hz
D/A converter	1-bit D/A converter
Wow and flutter	Unmeasurable (less than 0.001% W. peak)
Signal/noise ratio	95 dB (1 kHz)
Dynamic range	90 dB (1 kHz)
Audio channel	Stereo: 2 channels (SP, LP2, LP4) Monaural: 1 channel (MONO)

■ Tuner

Frequency range	FM: 87.5 - 108 MHz AM: 522 - 1,620 kHz

CP-CX1H

Type	2-way type speaker system 2 cm (13/16") Tweeter 12 cm (4-3/4") Woofer
Maximum input power	40 W
Rated input power	20 W
Impedance	6 ohms
Dimensions	Width: 170 mm (6-3/4") Height: 300 mm (11-13/16") Depth: 186 mm (7-3/8")
Weight	2.0 kg (4.4 lbs.)/each

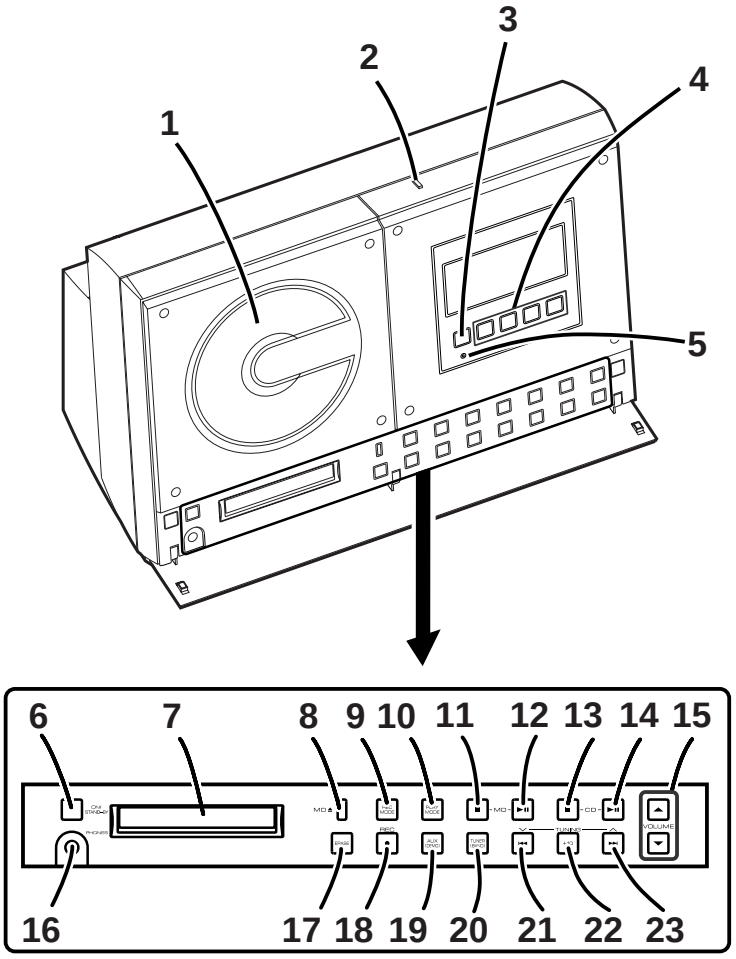
Specifications for this model are subject to change without prior notice.

NAMES OF PARTS

SD-CX1H

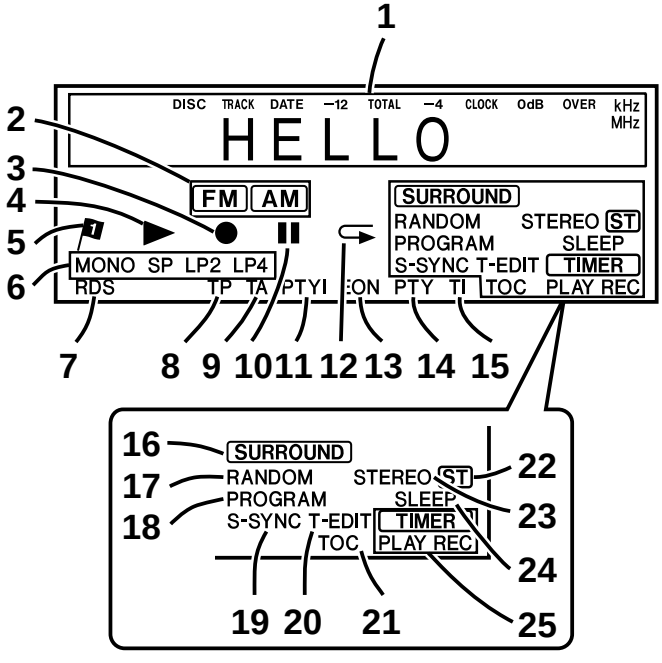
■ Front panel

1. CD Cover
2. CD Cover Open/Close Button
3. Remote Sensor
4. Function Indicator
5. Timer Indicator
6. On/Stand-by Button
7. MD Compartment
8. MD Eject Button
9. MD Record Mode Button
10. CD/MD Play Mode Select Button
11. MD Stop Button
12. MD Play/Pause Button
13. CD Stop Button
14. CD Play/Pause Button
15. Volume Up or Down Button
16. Headphone Socket
17. Erase Button
18. MD Record Button
19. Auxiliary/Demo Button
20. Tuner (Band) Button
21. CD/MD Fast Reverse, Tuning Down Button
22. MD +10 Track Up Button
23. CD/MD Fast Forward, Tuning Up Button



■ Multi-function LCD display

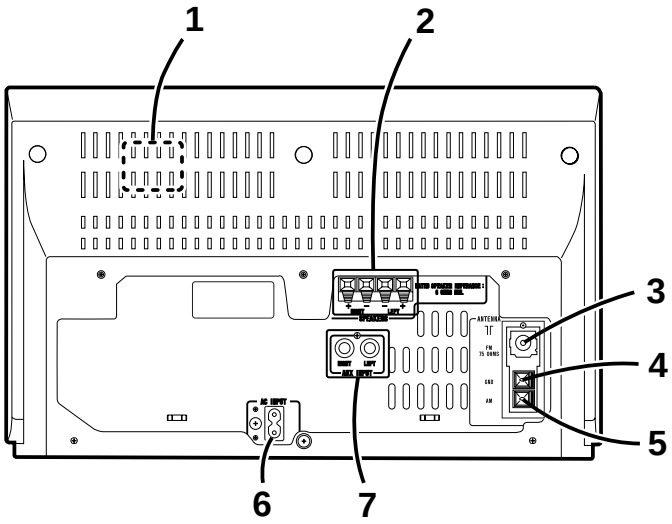
1. Level Meter/Character Information/Frequency Indicator
2. Band Selector Indicator
3. Record Indicator
4. CD/MD Play Indicator
5. Top Position Indicator
6. Record Mode Indicator
7. RDS Indicator
8. Traffic Programme Indicator
9. Traffic Announcement Indicator
10. MD Record Pause Indicator
11. Dynamic PTY Indicator
12. CD/MD Repeat Indicator
13. EON Indicator
14. Programme Type Indicator
15. Traffic Information Indicator
16. Surround Indicator
17. Random Play Indicator
18. Programme Play Indicator
19. Sound Synchronised Recording Indicator
20. Track Edit Indicator
21. TOC Indicator
22. FM Stereo Indicator
23. FM Stereo Mode Indicator
24. Sleep Indicator
25. Timer Play/Recording Indicator



SD-CX1H

■ Rear panel

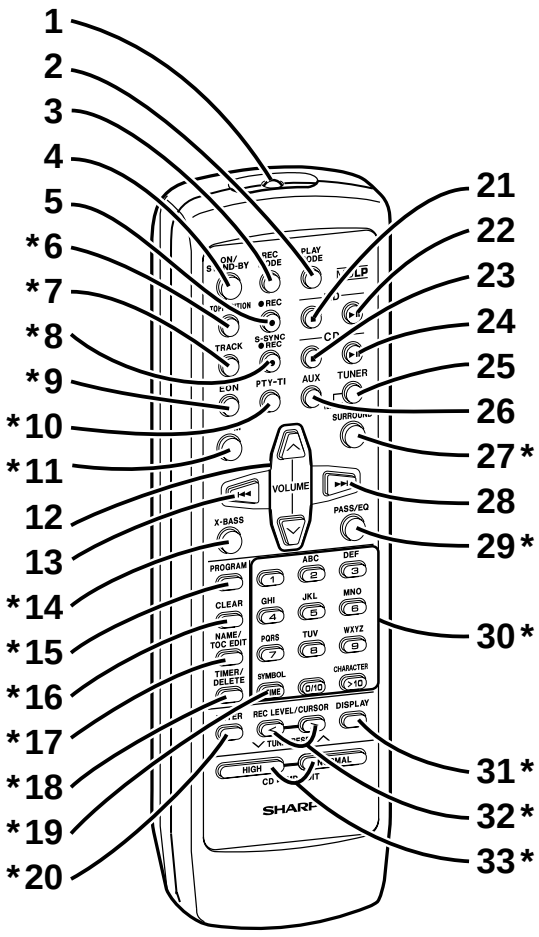
1. **Cooling Fan**
2. **Speaker Terminals**
3. **FM 75 Ohms Aerial Socket**
4. **Aerial Earth Terminal**
5. **AM Loop Aerial Socket**
6. **AC Input Socket**
7. **Auxiliary Input Sockets**



■ Remote control

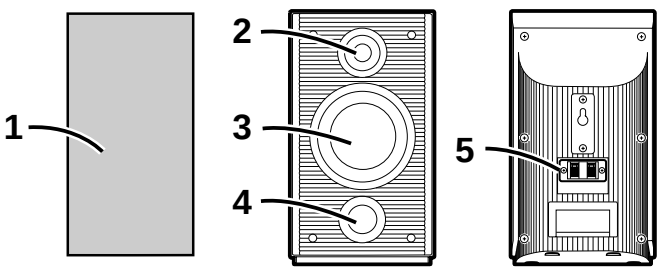
1. **Remote Control Transmitter**
2. CD/MD Play Mode Select Button
3. MD Record Mode Button
4. On/Stand-by Button
5. MD Record Button
6. **Top Position Button**
7. **Track Edit Button**
8. **Sound Synchronise Record Button**
9. **RDS EON Button**
10. **RDS Programme Type/Traffic Information Search Button**
11. **RDS ASPM (Auto Station Programme Memory) Button**
12. Volume Up or Down Button
13. CD/MD Fast Reverse, Tuning Down Button
14. **Extra Bass Button**
15. **CD/MD Programme Button**
16. **Clear Button**
17. **Name/TOC-Edit Button**
18. **Timer/Delete Button**
19. **Time Button**
20. **Enter Button**
21. MD Stop Button
22. MD Play/Pause Button
23. CD Stop Button
24. CD Play/Pause Button
25. Tuner (Band) Button
26. Auxiliary Button
27. **Surround Button**
28. CD/MD Fast Forward, Tuning Up Button
29. **Preset Equalizer Button**
30. **Character Input/CD, MD, Tuner Direct Buttons**
31. **Display Button**
32. **Recording Level/Cursor/Tuner Preset Button**
33. **CD/MD Edit Button**

Buttons with "*" mark in the illustration can be operated on the remote control only. Other buttons can be operated both the main unit and the remote control.



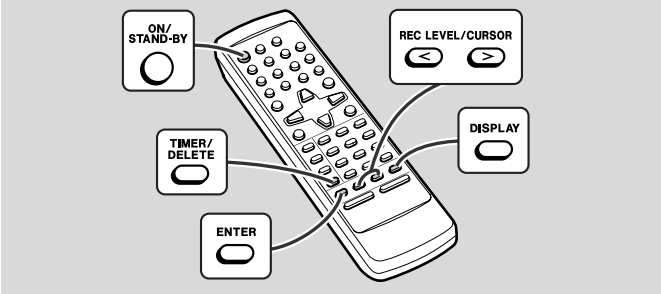
CP-CX1H

1. **Speaker Grille**
2. **Tweeter**
3. **Woofer**
4. **Bass Reflex Duct**
5. **Speaker Terminals**



OPERATION MANUAL

Setting the Clock



In this example, the clock is set for 9:30 15. 02 '01 .

1 **Press the ON/STAND-BY button to turn the power on.**

2 **Press the TIMER/DELETE button.**

3 **Within 10 seconds, press the REC LEVEL/CURSOR < or > button to select the "TIME ADJUST".**

TIME ADJUST

4 **Within 10 seconds, press the ENTER button.**

5 **Press the REC LEVEL/CURSOR < or > button to adjust the year, and then press the ENTER button.**

01.01'01

6 **Press the REC LEVEL/CURSOR < or > button to adjust the month, and then press the ENTER button.**

01.02'01

7 **Press the REC LEVEL/CURSOR < or > button to adjust the date, and then press the ENTER button.**

15.02'01

8 **Press the REC LEVEL/CURSOR < or > button to adjust the hour, and then press the ENTER button.**

9:00

9 **Press the REC LEVEL/CURSOR < or > button to adjust the minutes, and then press the ENTER button.**

9:30

- The hour will not advance even if minutes advance from "59" to "00".
- The clock starts from "0" second. (Seconds are not displayed.) The time display will disappear after a few seconds.

To confirm the time display:
[When the unit is in the stand-by mode]
Press the DISPLAY button on the remote control.
The time display will appear for about 5 seconds.
[When the power is on]
Press the TIMER/DELETE button.
Within 10 seconds, press the REC LEVEL/CURSOR < or > button.
The time display will appear for about 10 seconds.

Note:
The clock setting will be cleared when the unit is unplugged or the power failure occurs.

To reset the clock:
Perform "Setting the Clock" from the beginning.

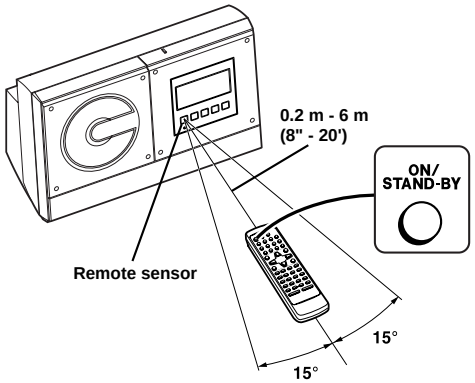
Remote Control

■ Test of the remote control

Check the remote control after checking all connections have been made correctly.

Face the remote control directly to the remote sensor on the unit.

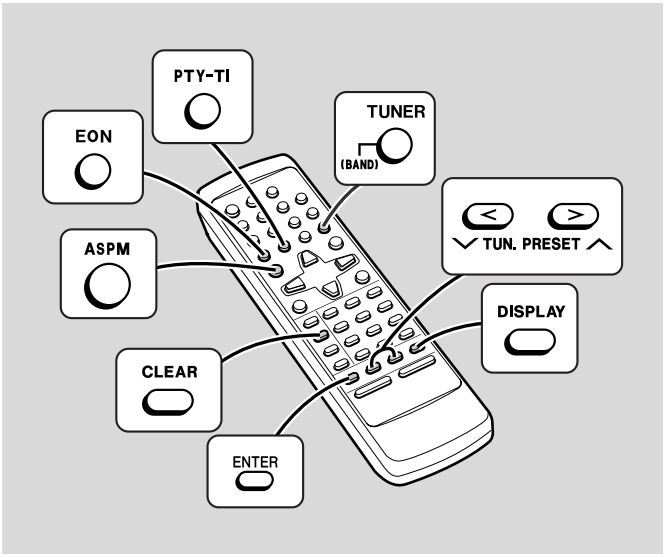
The remote control can be used within the range shown below:
Press the ON/STAND-BY button. Does the power turn on? Now, you can enjoy the music.



Using the Radio Data System (RDS)

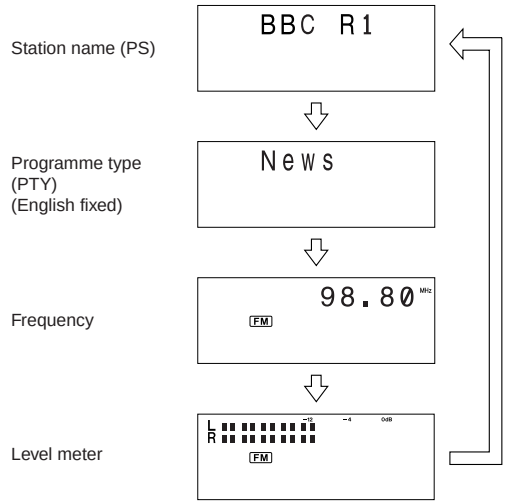
RDS is a broadcasting service which a growing number of FM stations provide. These FM stations send additional signals along with their regular programme signals. They send their station names, and information about the type of programme such as sports or music, etc.
When tuned to an RDS station, "RDS" and the station name will be displayed.
"TP" (Traffic Programme) will appear on the display when the received broadcast carries traffic information, and "TA" (Traffic Announcement) will appear whilst a traffic information is on air.
"EON" will appear whilst the EON (Enhanced Other Networks information) data is broadcast.
"PTYI" (Dynamic PTY Indicator) will appear whilst the Dynamic PTY station is received.

You can control the RDS by using the remote control only.

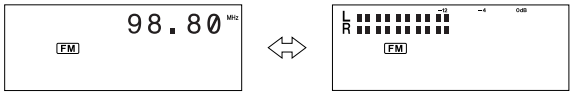


■ Information provided by RDS

Each time the DISPLAY button is pressed, the display will switch as follows:



When you are tuning in to a station other than an RDS station or to an RDS station which sends weak signal, the display will change in the following order:



Frequency Level meter

Descriptions of the PTY (Programme Type) codes, TP (Traffic Programme) and TA (Traffic Announcement).
You can search for and receive the following PTY, TP and TA signals.

News	Short accounts of facts, events and publicly expressed views, reportage and actuality.
Affairs	Topical programme expanding or enlarging upon the news, generally in different presentation style or concept, including debate, or analysis.
Info	Programmes whose purpose is to impart advice in the widest sense.
Sport	Programme concerned with any aspect of sport.
Educate	Programme intended primarily to educate, of which the formal element is fundamental.
Drama	All radio plays and serials.
Culture	Programmes concerned with any aspect of national or regional culture, including language, theatre, etc.
Science	Programmes about the natural sciences and technology.
Varied	Used for mainly speech-based programmes usually of light-entertainment nature, not covered by other categories. Examples include: quizzes, panel games, personality interviews.
Pop M	Commercial music, which would generally be considered to be of current popular appeal, often featuring in current or recent record sales charts.
Rock M	Contemporary modern music, usually written and performed by young musicians.
Easy M	Current contemporary music considered to be "easy-listening", as opposed to Pop, Rock or Classical, or one of the specialised music styles, Jazz, Folk or Country. Music in this category is often but not always, vocal, and usually of short duration.
Light M	Classical music for general, rather than specialist appreciation. Examples of music in this category are instrumental music, and vocal or choral works.
Classics	Performances of major orchestral works, symphonies, chamber music, etc., and including Grand Opera.
Other M	Musical styles not fitting into any of the other categories. Particularly used for specialist music of which Rhythm & Blues and Reggae are examples.
Weather	Weather reports and forecasts and meteorological information.
Finance	Stock Market reports, commerce, trading, etc.
Children	For programmes targeted at a young audience, primarily for entertainment and interest, rather than where the objective is to educate.
Social	Programmes about people and things that influence them individually or in groups. Includes: sociology, history, geography, psychology and society.
Religion	Any aspect of beliefs and faiths, involving a God or Gods, the nature of existence and ethics.
Phone in	Involving members of the public expressing their views either by phone or at a public forum.
Travel	Features and programmes concerned with travel to near and far destinations, package tours and travel ideas and opportunities. Not for use for announcements about problems, delays, or roadworks affecting immediate travel where TP/TA should be used.
Leisure	Programmes concerned with recreational activities in which the listener might participate. Examples include, Gardening, Fishing, Antique collecting, Cooking, Food & Wine, etc.
Jazz	Polyphonic, syncopated music characterised by improvisation.
Country	Songs which originate from, or continue the musical tradition of the American Southern States. Characterised by a straightforward melody and narrative story line.
Nation M	Current Popular Music of the Nation or Region in that country's language, as opposed to International 'Pop' which is usually US or UK inspired and in English.
Oldies	Music from the so-called "golden age" of popular music.
Folk M	Music which has its roots in the musical culture of a particular nation, usually played on acoustic instruments. The narrative or story may be based on historical events or people.
Document	Programme concerned with factual matters, presented in an investigative style.
TEST	Broadcast when testing emergency broadcast equipment or receivers.
Alarm !	Emergency announcement made under exceptional circumstances to give warning of events causing danger of a general nature.
None	No programme type (receive only).
TP	Broadcasts which carry traffic announcements.
TA	Traffic announcements are being broadcast.

Note:
When you select a programme in the EON stand-by mode, the unit will display "TI" instead of "TA".

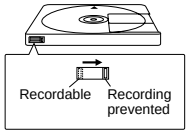
What is a MiniDisc?

The disc is stored in a cartridge. You can handle it easily without worrying about dust, fingerprints, etc. However, dust entering the opening of the cartridge, dirt on the cartridge, warping, etc. may cause malfunctions. Please note the following.

■ To prevent recorded MiniDiscs from being erased accidentally

Slide the accidental erase prevention tab, located on the side of the MiniDisc, in the direction indicated by the arrow.

- The MiniDisc is then be protected against accidental erasure.



To add a recording to such a MiniDisc, slide the accidental erase prevention tab back to its original position.

■ Helpful tip when attaching a label

When attaching a label to a MiniDisc cartridge, be sure to note the following. If the label is not attached properly, the MiniDisc may jam inside the unit and it may not be possible to remove it.

- If the label peels off or partially lifts away, replace it with a new one.
- Do not put a new label on top of an existing one.
- Attach the label only in the specified location.

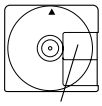
■ Types of discs

There are two types of discs: playback-only and recordable types.

- **Playback-only MiniDisc:**
  This type of MiniDisc is used for commercially available prerecorded music. This is the same kind of optical disc as CDs. Playback is performed using an optical pickup. (Recording and editing are not possible.)

A Shutter will be used on only one side (back).

- **Recordable MiniDisc:**
  This is a "raw disc" on which recording can be performed. A magneto optical disc is used. Recordings are made using a laser and magnetic field. Repeated recording is possible.



Shutters will be used on both sides.

MiniDisc System Limitations

Even if the maximum recording time of a MiniDisc has not been reached, "TOC FULL" may be displayed.	In the MD system, the delimiter of the recording area on a MiniDisc is programmed in a TOC. If partial erasing, recording and editing are repeated several times, TOC information will fill up, even though the number of tracks has not reached the limit (255 tracks), and further recording will be impossible. (If you use the all erase function, this MiniDisc can be used from the beginning.)
Even if the maximum recording time of a MiniDisc has not been reached, "DISC FULL" may be displayed.	If there is any flaw on the MiniDisc, that part is automatically excluded from the space available for recording. Therefore, the recording time becomes shorter.
Even if several short tracks are erased, the remaining recording time may not show an increase.	When the remaining recording time of a disc is displayed, short tracks less than 12 seconds long may not be included in the total.
Two tracks may not be combined in editing.	For MiniDiscs on which repeated recording and editing operations were performed, the COMBINE function may not work. A track recorded from a CD (digital recording) and a track recorded from a radio or other equipment (analogue recording) cannot be combined.
The total of the recorded time and time remaining on a disc may not add up to the maximum possible recording time.	A cluster (about 2 seconds) is normally the minimum unit of recording. So, even if a track is less than 2 seconds long, it will use about 2 seconds of space on the disc. Therefore, the time actually available for recording may be less than the remaining time displayed. If there are scratches on discs, those sections will be automatically avoided (no recording will be placed in those sections). Therefore, the recording time will be reduced.
If recorded tracks are fast reversed or fast forwarded, the sound may skip.	A MiniDisc which has been recorded or edited repeatedly may skip during fast reverse or fast forward.

Error Messages

When an error message is displayed, proceed as follows:

Error messages	Meaning	Remedy
BLANK MD	● Nothing is recorded. (Neither music nor disc name is recorded.)	● Replace it with another disc.
Can't COPY	● You tried to record from a copy prohibited CD.	● Replace the CD.
Can't EDIT	● A track cannot be edited.	● Change the stop position of the track and then try editing it.
Can't READ* **(*: Number or symbol)**	● The disc is damaged. ● TOC information cannot be read. ● MiniDisc not specified.	● Replace it with another disc. ● Erase the disc and try recording again.
Can't REC	● Recording cannot be performed correctly due to vibration or shock in the unit.	● Re-record or replace the MiniDisc.
Can't T REC	● Timer recording is impossible or there is no available space on the MD. ● The disc is out of recording space.	● Replace it with another recordable disc.
Can't WRITE	● The TOC information could not be created properly due to a mechanical shock or to scratches on the disc.	● Set this unit to the stand-by mode and try to write the TOC again. (Remove any source of shock or vibration whilst writing.)
CD NO DISC	● A CD has not been loaded. ● The CD data cannot be read.	● Load a CD. ● Reload the CD.
DISC FULL	● The disc is out of recording space.	● Replace the disc with another recordable disc.
EDIT OVER	● You chose 21 or more tracks for track editing.	● Decrease the number of tracks.
Er - MD ** **(: Number or symbol)**	● A MiniDisc is not working properly.	● Press the MD ⏏ button. ● Set this unit to the stand-by mode and turn the power on again.

Error messages	Meaning	Remedy
MD NO DISC	● A MiniDisc has not been loaded. ● The MiniDisc data cannot be read.	● Load a MiniDisc. ● Reload the MiniDisc.
NAME FULL	● The number of characters for the disc name or track name exceeds 40.	● Shorten the disc or track name.
NOT AUDIO	● The data recorded on this disc is not audio data.	● Replace the disc.
PLAYBACK MD	● You tried to record on a playback-only disc.	● Replace it with another recordable disc.
POWER ?	● A MiniDisc is not working properly.	● Set this unit to the stand-by mode and turn the power on again.
PROTECTED	● The disc is write protected.	● Move the write protection tab back to its original position.
TEMP OVER	● The temperature is too high.	● Set this unit to the stand-by mode and wait for a whilst.
TOC FORM ** **(: Number or symbol)**	● TOC information recorded on the MD does not match the MiniDisc specifications or it cannot be read.	● Replace it with another disc. ● Erase the disc and try recording again.
TOC FULL	● There is no space left for recording track numbers.	● Replace it with another recordable disc.
TOC FULL 1	● There is no space left for recording character information.	● Replace it with another recordable disc. ● Erase the needless characters.
? MD DISC	● The data contains an error. ● MiniDisc not specified.	● Press the MD ⏏ button. ● Replace it with another disc.

Troubleshooting Chart

Many potential "problems" can be resolved by the owner without calling a service technician.

■ General

Symptom	Possible cause
● "TIME ADJUST" appears when the clock time is checked.	● Did a power failure occur? Reset the clock.
● When a button is pressed, the unit does not respond.	● Set this unit to the power stand-by mode and then turn it back on.
● No sound is heard.	● Is the volume level set to "0"? ● Are the headphones connected? ● Are the speaker wires disconnected?
● The picture on the TV screen is distorted.	● When a radio or TV which uses an indoor aerial is placed near the unit, the picture on the TV screen may be distorted or the radio may not function properly. ● It is recommended that you use an external aerial.

■ CD player

Symptom	Possible cause
● Even though a disc has been loaded, "CD NO DISC" or "Can't READ" is displayed.	● The disc is very dirty. ● Is the unit located near excessive vibrations? ● Has condensation formed inside the unit?
● Playback does not start. Playback stops in the middle or is not performed properly.	● The disc is loaded upside down. ● The disc does not satisfy the standards. ● The disc is distorted or scratched.
● Playback sounds are skipped, or stopped in the middle of a track.	● Is the unit located near excessive vibrations? ● The disc is very dirty. ● Has condensation formed inside the unit?

■ MiniDisc

Symptom	Possible cause
● A recording cannot be made.	● Is the MiniDisc protected against accidental erasure? ● Did you try to make recording on a playback-only MiniDisc? ● Can you see the "DISC FULL" or "TOC FULL" message in the display?
● Even though a disc has been loaded, "MD NO DISC" or "Can't READ" is displayed. ● Playback sounds are skipped.	● The disc is very dirty. ● Is the unit located near excessive vibrations? ● Has condensation formed inside the unit?

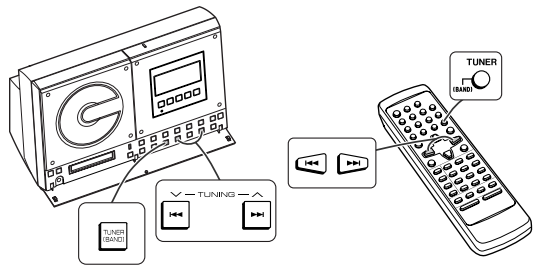
■ Tuner

Symptom	Possible cause
● Radio makes unusual noise consecutively.	● The stereo system is placed near the TV or computer. ● FM/AM loop aerial is not placed properly. Move the AC power lead away from the aerial if located near.
● The preset channel cannot be recalled.	● Did a power failure occur? ● Preset the channel again.

■ Remote control

Symptom	Possible cause
● The remote control does not operate.	● Is the AC power lead of the stereo system plugged in? ● The battery polarity is not correct. ● The batteries are dead. ● Incorrect distance or angle. ● Does the remote control sensor receive strong light?

Listening to the Radio



1 TUNER (BAND)

Press the TUNER (BAND) button repeatedly to select the desired frequency band (FM STEREO, FM or AM).

2 TUNING

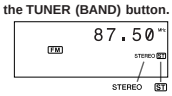
Press the TUNING (∨ or ∧) button to tune in to the desired station.

● When the TUNING (∨ or ∧) button is pressed for more than 0.5 seconds, scanning will start automatically and the tuner will stop at the first receivable broadcast station.

3 TUNER (BAND)

To receive an FM stereo transmission, press the TUNER (BAND) button. The "STEREO" indicator lights up.

● "ST" will appear when an FM broadcast is in stereo.



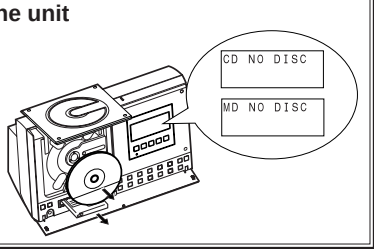
■ If trouble occurs (reset)

When this product is subjected to strong external interference (mechanical shock, excessive static electricity, abnormal supply voltage due to lightning, etc.) or if it is operated incorrectly, it may malfunction.

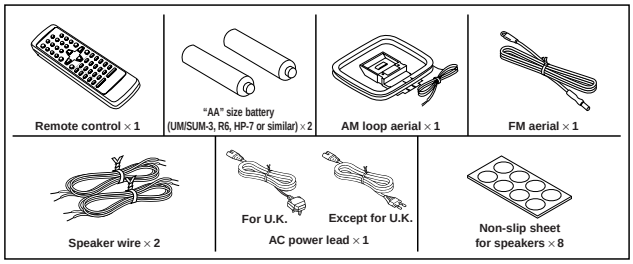
If such a problem occurs, do the following:
Unplug the power lead from the AC socket. Then, plug it in again and retry the operation.

■ Before transporting the unit

Remove the CD and MD from the unit. Your unit checks whether there are any discs inside. "CD NO DISC" and "MD NO DISC" appear if no disc is inside. Then, set the unit to the power stand-by mode. Carrying the unit with discs left inside can damage it.

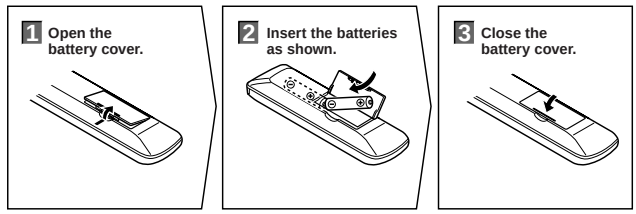


1 Accessories

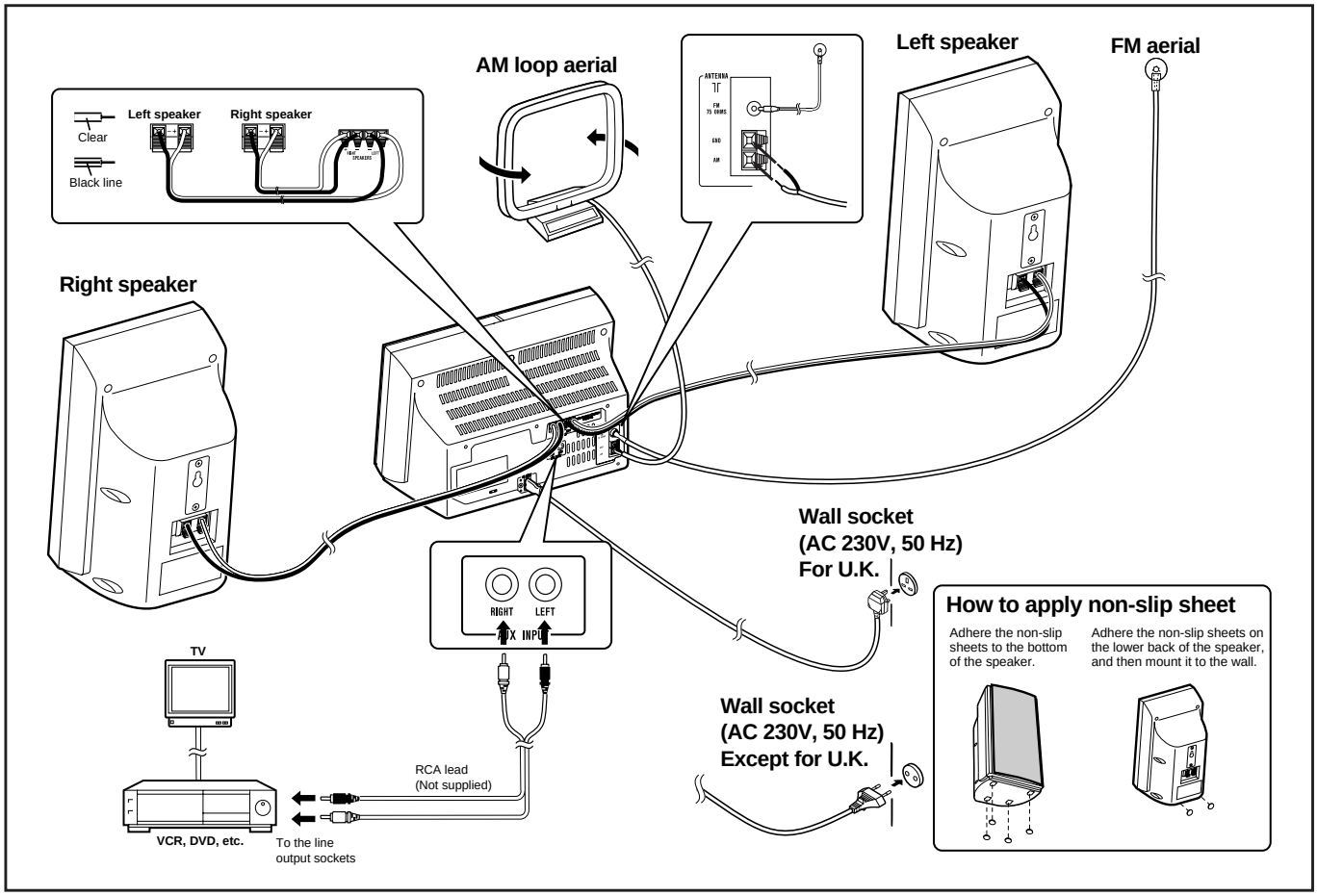


2 Battery installation of remote control

Use 2 "AA" size batteries (UM/SUM-3, R6, HP-7 or similar).



3 System Connections

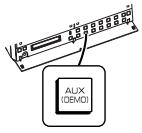


4 Turn on your System

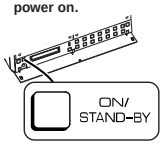
The first time the unit is plugged in, the unit will enter the demonstration mode. You will see words scroll.

DEMO ON

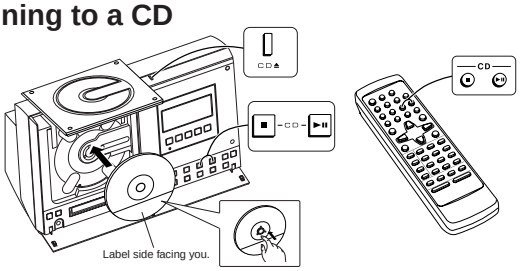
1 Press the AUX (DEMO) button to cancel the demonstration mode.



2 Press the ON/STAND-BY button to turn the power on.



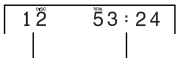
Listening to a CD



1 Press the CD ■ button.

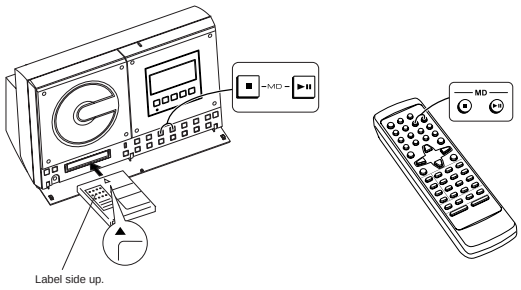
2 Press the CD ≜ button to open the CD cover.

3 Set the CD and press the CD ≜ button.

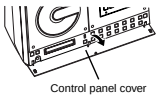


4 Press the CD ▶II button to start playback.

Listening to a MiniDisc

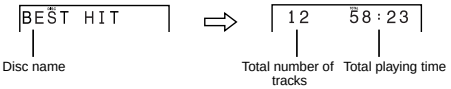


1 Open the control panel cover.



2 Press the MD ■ button.

3 Load a MiniDisc into the MD compartment, label side up.



4 Press the MD ▶II button to start playback.

DISASSEMBLY

Caution on Disassembly
Follow the below-mentioned notes when disassembling the unit and reassembling it, to keep it safe and ensure excellent performance:
1. Take compact disc and mini disc out of the unit.
2. Be sure to remove the power supply plug from the wall outlet before starting to disassemble the unit.
3. Take off nylon bands or wire holders where they need to be removed when disassembling the unit. After servicing the unit, be sure to rearrange the leads where they were before disassembling.
4. Take sufficient care on static electricity of integrated circuits and other circuits when servicing.

SD-CX1H

STEP	REMOVAL	PROCEDURE	FIGURE
1	Rear Cabinet	1. Screw ..... (A1) x3 2. Screw ..... (A2) x8	12-1
2	Front Panel	1. Flat Cable ..... (B1) x2 2. Screw ..... (B2) x2 3. Screw ..... (B3) x5 4. Socket ..... (B4) x3	12-2
3	Rear Panel	1. Screw ..... (C1) x3 2. Screw ..... (C2) x2 3. Screw ..... (C3) x3	12-2
4	1 BIT Amp. Unit	1. Screw ..... (D1) x1 2. Screw ..... (D2) x2 3. Socket ..... (D3) x5	12-3
5	Power PWB	1. Screw ..... (E1) x1 2. Socket ..... (E2) x2 3. Flat Cable ..... (E3) x1	13-1
6	Tuner PWB	1. Screw ..... (F1) x1 2. Socket ..... (F2) x1	13-1
7	Main PWB	1. Screw ..... (G1) x3 2. Flat Cable ..... (G2) x1	13-2
8	MD Unit	1. Screw ..... (H1) x4	13-2
9	CD PWB (Note)	1. Flat Cable ..... (J1) x1 2. Socket ..... (J2) x5 3. Screw ..... (J3) x3	13-3
10	Switch PWB	1. Screw ..... (K1) x1	13-3
11	CD Mechanism	1. Screw ..... (L1) x2 2. Screw ..... (L2) x2	13-3
12	Display PWB/ CD Eject PWB/ Headphones PWB	1. Screw ..... (M1) x11 2. Socket ..... (M2) x1 3. Hook ..... (M3) x2	13-4
13	LED PWB	1. Solder joint ..... (N1) x4 2. Hook ..... (N2) x1	13-4
14	1 BIT Amp. PWB	1. Screw ..... (P1) x2 2. Fan Motor ..... (P2) x1 3. Screw ..... (P3) x2 4. Fan Bracket ..... (P4) x1 5. Screw ..... (P5) x2 6. Amp. Bracket .... (P6) x1 7. Screw ..... (P7) x4 8. Amp. Heat Sink . (P8) x1 9. Screw ..... (P9) x4 10. Washer ..... (P10) x2 11. Screw ..... (P11) x4 12. Shield Case ..... (P12) x1 13. Screw ..... (P13) x4 14. Shield Case ..... (P14) x1	13-5 13-6

Note:
After removing the connector for the optical pickup from the connector, wrap the conductive aluminium foil around the front end of connector remove to protect the optical pickup from electrostatic damage.

SD-CX1H

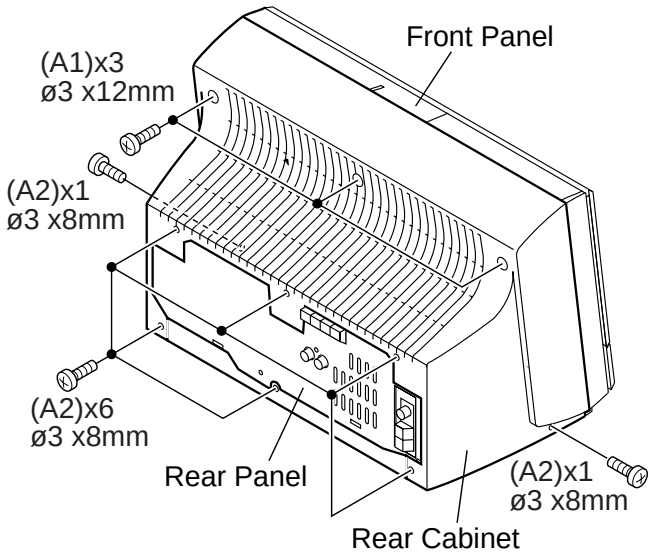


Figure 12-1

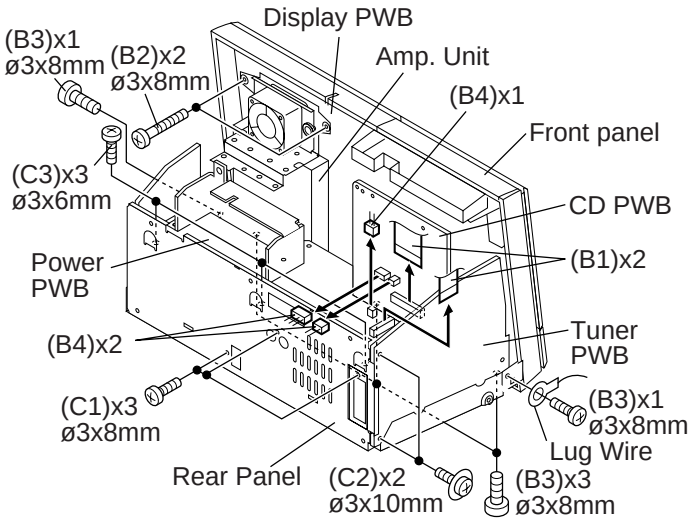


Figure 12-2

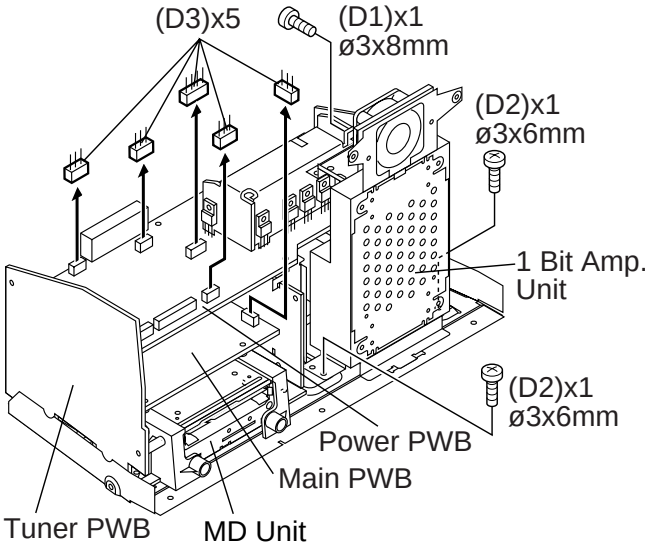


Figure 12-3

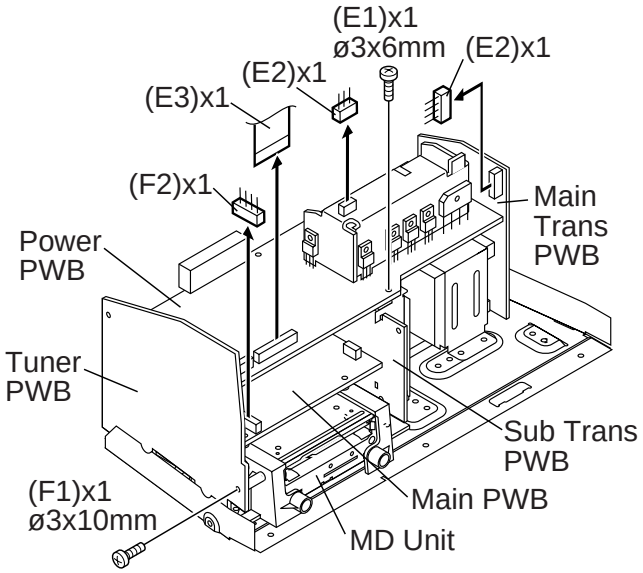


Figure 13-1

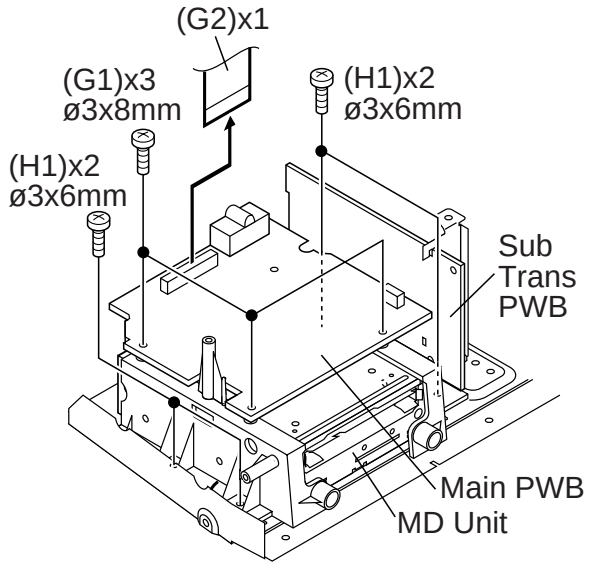


Figure 13-2

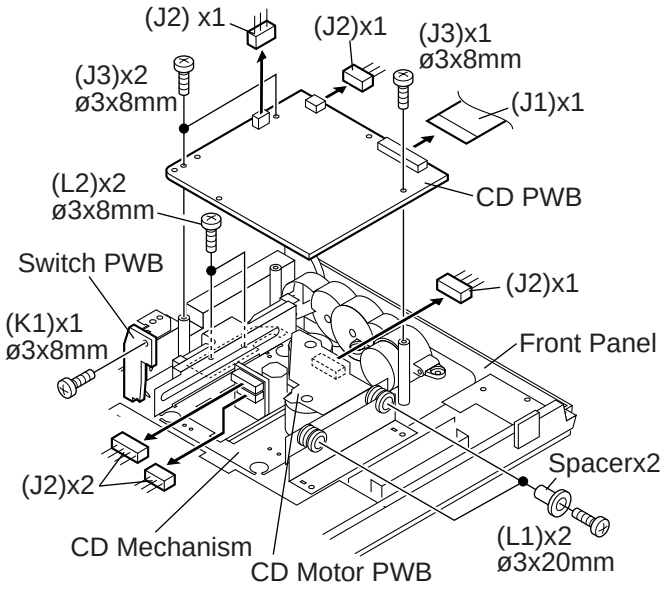


Figure 13-3

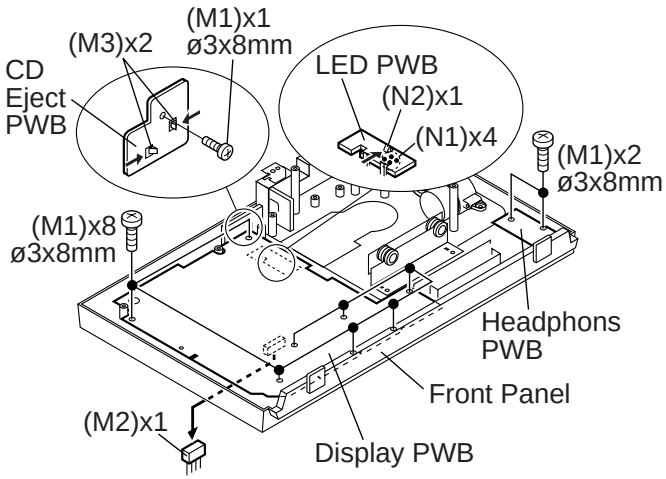


Figure 13-4

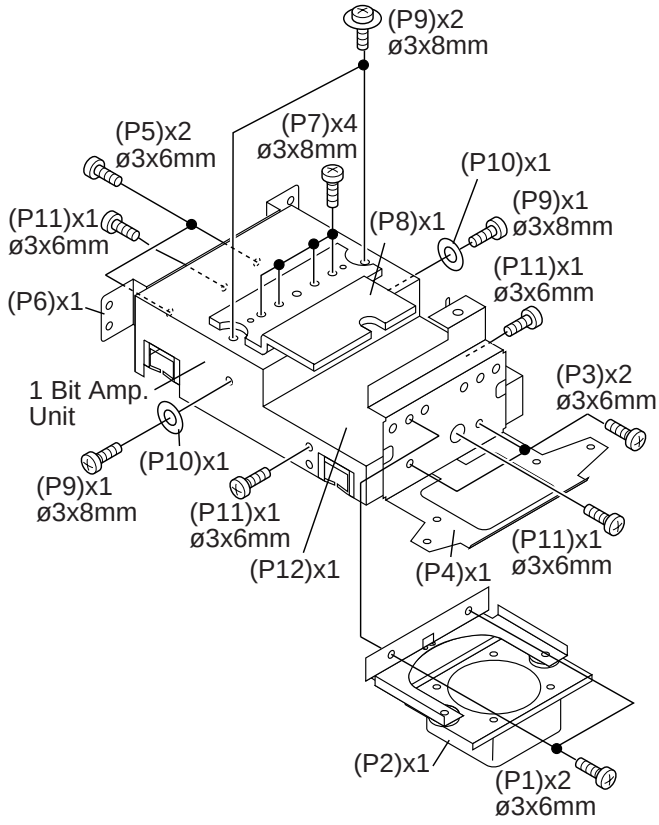


Figure 13-5

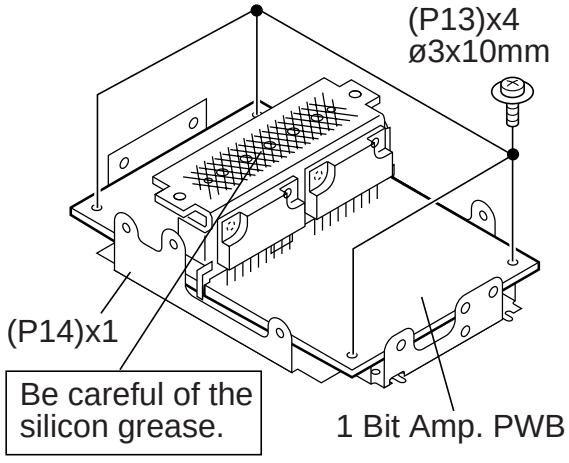
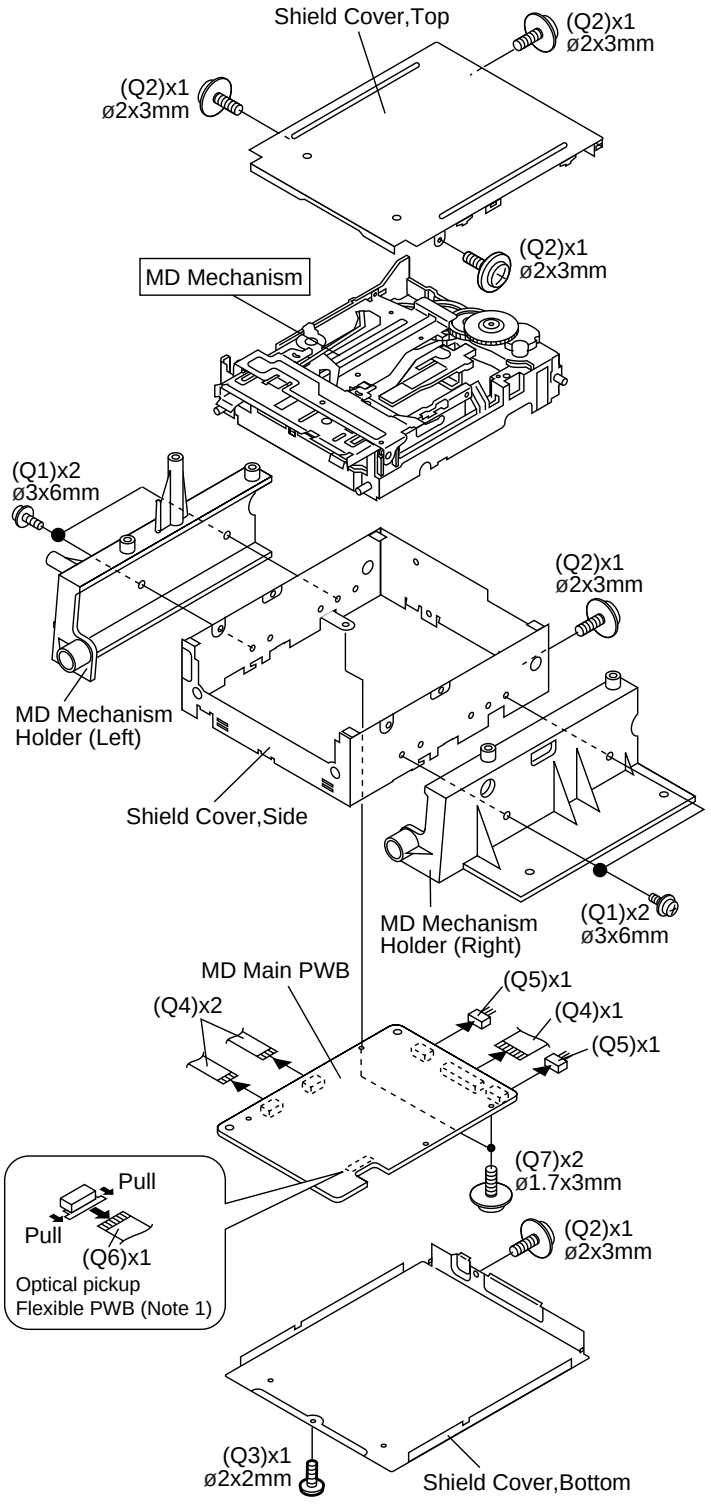


Figure 13-6

SD-CX1H

SD-CX1H (MD MECHANISM UNIT)			
STEP	REMOVAL	PROCEDURE	FIGURE
15	MD Mechanism holder (Left/Right)	1. Screw ..... (Q1) x4	14-1
16	Shield Cover (Top/Side/Bottom)	1. Screw ..... (Q2) x5 2. Screw ..... (Q3) x1	14-1
17	MD Mechanism	1. Flat Cable ..... (Q4) x3 2. Socket ..... (Q5) x2 3. Flexible PWB .. (Q6) x1	14-1
18	MD Main PWB	1. Screw ..... (Q7) x2	14-1



(Note 1)
After removing the flexible PWB for optical pickup from the connector wrap the front end of flexible PWB in conductive aluminum foil so as to protect the optical pickup from being damaged electrostatically.

Figure 14-1

CP-CX1H			
STEP	REMOVAL	PROCEDURE	FIGURE
1	Rear Cabinet	1. Screw ..... (A1) x6	14-2
2	Tweeter	1. Screw ..... (B1) x4	14-3
3	Woofer	1. Screw ..... (B2) x4	14-3

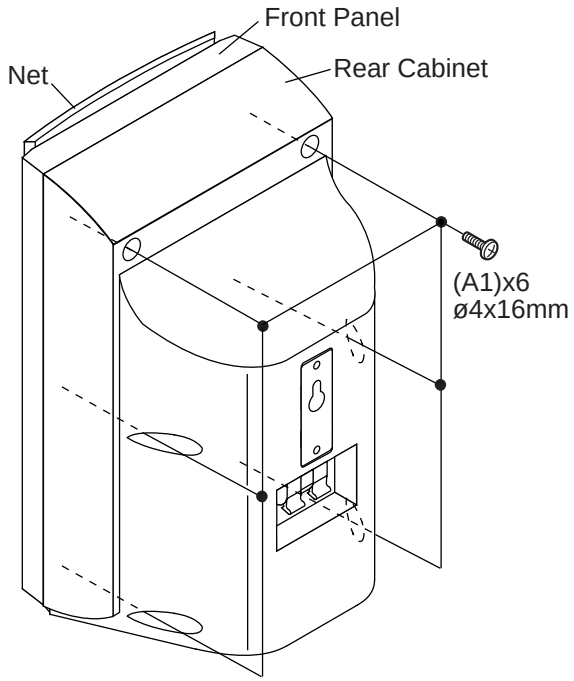


Figure 14-2

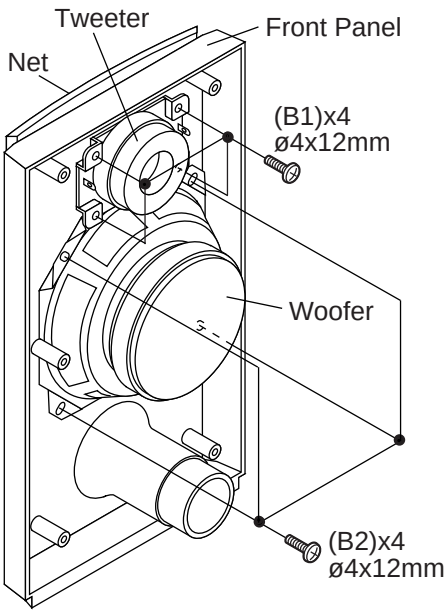


Figure 14-3

REMOVING AND REINSTALLING THE MAIN PARTS

MD MECHANISM SECTION

For details about the procedure to remove the MD mechanism from the main unit, refer to the Disassembly Procedure, Steps 1-8 and 15-16 in the main unit and also the MD section. (Referring to page14)

Caution:

After pulling out the optical pickup connector, wrap the end of the connector in conductive aluminium foil to prevent the optical pickup from being destroyed by static electricity.

How to remove the magnetic head (See Fig. 15-1)

1. Remove the screw (A1) x 1 pc.

Caution:

Take utmost care so that the magnetic head is not damaged when it is mounted.

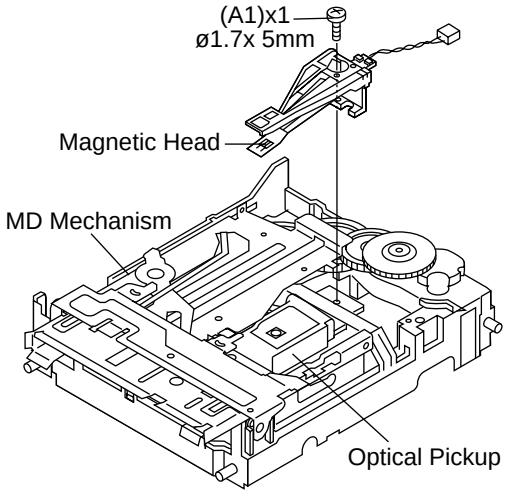


Figure 15-1

How to remove the MD loading motor PWB/MD loading motor (See Fig. 15-2)

1. Remove the screw (B1) x 1 pc.
2. Remove the Hooks (B2) x 3 pcs., and remove the MD Loading PWB.
3. Remove the screws (B3) x 2 pcs., and remove the MD Loading motor.

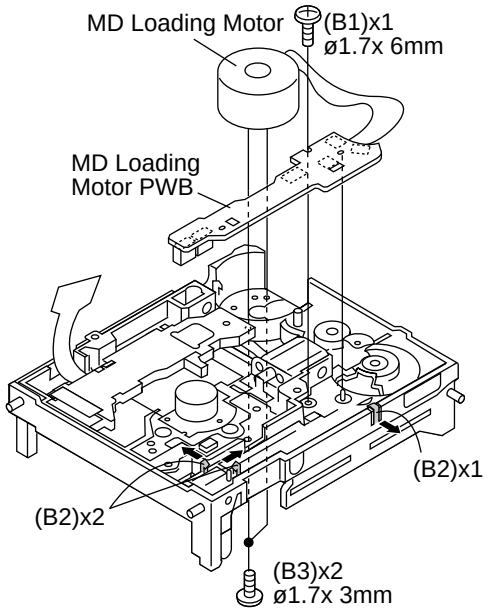


Figure 15-2

How to remove the MD sled motor/optical pickup (See Fig. 15-3)

1. Remove the screws (C1) x 3 pcs., and remove the MD sled motor.
2. Remove the optical pickup.

Caution:

Be careful so that the gear is not damaged.
(The damaged gear emits noise during searching.)

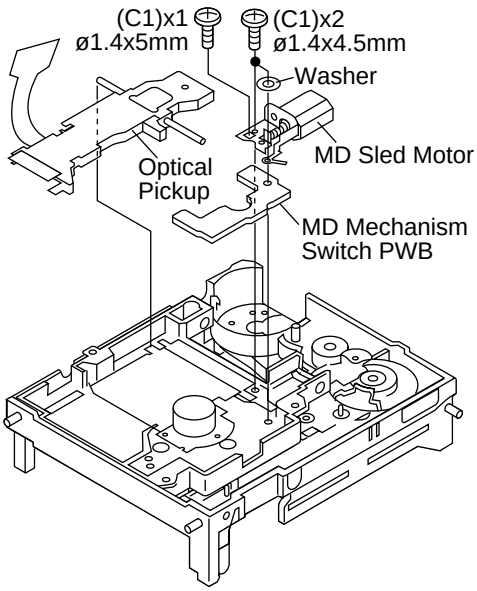


Figure 15-3

SD-CX1H

How to remove the MD spindle motor (See Fig. 16-1)

1. Remove the screws (D1) x 3 pcs., and remove the MD spindle motor.

Caution:

Be careful so that the gear is not damaged.
(The damaged gear emits noise during searching.)

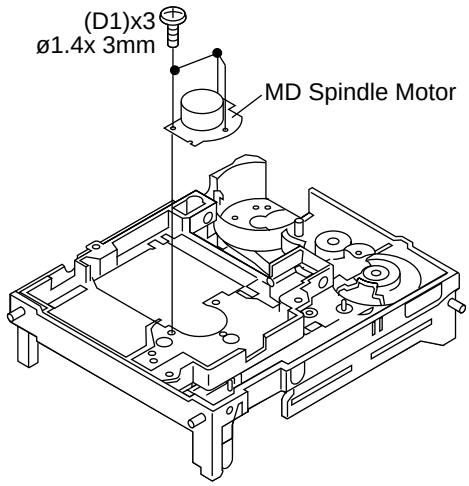


Figure 16-1

CD MECHANISM SECTION

Perform steps 1 to 11 of the disassembly method to remove the CD mechanism. (See page 13.)

How to remove the pickup (See Fig. 16-2)

1. Remove the mechanism cover, paying attention to the pawls (A1) x 4 pcs.
2. Remove the screws (A2) x 2 pcs., to remove the shaft (A3) x 1 pc.
3. Remove the stop washer (A4) x 1 pc., to remove the gear (A5) x 1 pc.
4. Remove the pickup.

Note:
After removing the connector for the optical pickup from the connector, wrap the conductive aluminium foil around the front end of connector remove to protect the optical pickup from electrostatic damage.

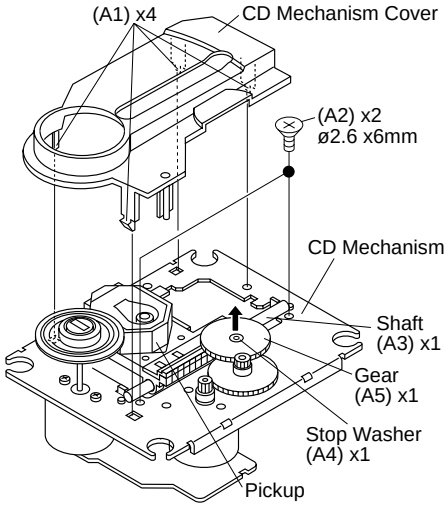


Figure 16-2

How to Remove the CD lid motor (See Fig. 16-3.)

1. Remove the front panel.
   (Refer to the disassembly method on page 12.)
2. Remove the screws (B1) x 4 pcs.
3. Remove the CD lid gear unit from the front panel.
4. Remove the screws (B2) x 5 pcs. to remove the gear box B.
5. Remove the gear (B3) x 1 pc.
6. Remove the screws (B4) x 2 pcs. to remove the CD lid motor.

Caution:

Be careful not to damage the gear.
(If the gear is damaged, noise is heard when searching.)

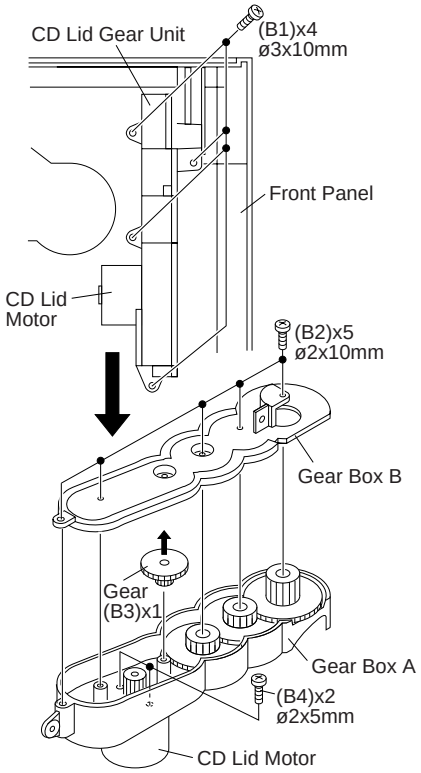


Figure 16-3

DESCRIPTION OF CIRCUIT FOR 1-BIT AMP. UNIT

(SEE THE WIRING DIAGRAMS ON PAGES 52 AND 53.)

Input

Signals over certain level input from BIA106 are sliced into waveforms by RA173 (RA174), DA126, and DA127 (DA128, DA129). The slice levels depend on the output of the unit.
In case of 25 W output setting, the level is set to gain distortion of approx. 10 % during output.
The level on the positive side is determined by RA175, RA177 and RA179 and that on the negative side by RA176, RA178, and RA180, respectively.
After DC cut by CA108, the signals are input to AD conversion IC.

$\Delta\Sigma$ modulation 1-bit conversion

The signals input to the AD conversion IC are converted into 1-bit signals for differential output.
For detailed technical description of 1-bit signal conversion, refer the technical manual for SM-SX100 already published.

Dead time and level shift

When the 1-bit signals are output from the AD conversion IC, the leading edge of the waveform is delayed for 20 to 25 nsec by DA103 (DA102, DA101, and DA100), RA115 (RA114, RA113, and RA112), and CA155 (CA154, CA153, and CA152), compared with the trailing edge.
As mentioned below, this operation is for reducing switching circuit loss in the final stage.
The signals are input to the buffer IC (AND gate IC) for the waveform format and are output.
Then the DC level is shifted by CA115 (CA114, CA113, and CA112), DA107 (DA106, DA105, and DA104) and RA120 (RA119, RA118, and RA117). This is because the buffer IC operates between ground and + 5 V, while the next stage IC, gate driver (ICA101 to ICA 104), operates between the negative power source and + 9 V.
The shift quantity is output with amplitude of 5 V, based on the voltage raised by DA108 and DA109 from the bottom by approx. 2 V.

Output of gate driver

The level-shifted signals are input to the gate driver IC (HIP2100).
Since the final stage FET array is H bridge, two gate drivers are used for 1 CH.
At this time, + and - of differential signals are input by crossing diagonally for the two gate drivers.
(Positive output to ICA101 (ICA103) Hin and ICA102 (ICA104) Lin, and negative output to ICA102 (ICA104) Hin and ICA101 (ICA103) Lin.)
Output of the gate driver drives the gate of FET array connected to H bridge.
FET consists of the lower stage where source is connected to the negative power and the upper stage where drain is connected to the positive power. Lout and Hout are connected to the gate, respectively.
The lower stage FET is driven with 9 V amplitude based on the negative power because the reference voltage is same as in the gate driver. The upper stage FET does not operate as it is because it is based on the positive power. Therefore this gate drive IC (HIP2100) makes up bootstrap, by feeding back from FET output.
As a result, amplitude of Hout is approx. + 6V of the positive power, based on the negative power.

Low-pass filter circuit

1-bit signals switched at FET are converted into analog signals via the low-pass filter consisting of LA100 (LA102, LA104, and LA106) and CA142 (CA143, CA150, and CA151).
Property of the low-pass filter is flat up to 20 kHz and then is attenuated by approx. 3 dB at around 30 kHz.

Dynamic feedback circuit

1-bit signals switched at FET of output stage are amplified between the positive and negative power sources.
With resistance divided, 1-bit signals are fed back to AD conversion IC, via NF resistance 75 kohms.
P-P voltage, which becomes approx. 4 to 7V, is determined by the regulation property of the transformer depending on the output level.

TO CHECK AND CANCEL PROTECT CIRCUIT DETECTION LINE

1. After power supply, the microcomputer (ICD01) built in this model consecutively monitors the following errors 1 to 4. If any error occurs, 'Er_AP00' is displayed and all power supply except for the one to drive the microcomputer is interrupted.
   1 Abnormal output voltage drop of each regulator (below approx. 3 V)
   2 Excessive output offset of 1-bit amplifier (over approx. 2 V of DC potential)
   3 Excessive main supply current of 1-bit amplifier (over DC approx. 5.5 A)
   4 Abnormalities of cooling fan motor and its driving circuit (stop, etc.)

2. Criteria for judging errors of built-in microcomputer and checking/cancelling detection line
   Condition: The voltage of microcomputer pin 7 (PROTECT) lowering below 3.5 V is regarded as an error.
   (In the demonstration mode to stop cooling fan, the voltage of 1.5 V is regarded as an error.)

Checking/Cancelling

Caution: When interrupting the PROTECT detection line, the microcomputer does not operate protectively. In case of an error caused by output short-circuit of each regulator, components and board on the spot may be burnt. Do not interrupt the PROTECT detection line of the microcomputer, if any cause other than the above mentioned is not identified.
(For approx. 0.5 seconds after error detection, power is supplied; power supply can be checked with an oscilloscope, etc. As leading and trailing edges of the voltage are so steep that the power supply cannot be checked by the tester.)

1. Abnormal output voltage drop of each regulator

Connect the measuring apparatus (oscilloscope, etc.) to the stabilized output of the regulator to turn on the unit power switch. If the stabilized output is far smaller (below approx. 3 V) than that shown in the circuit diagram, the regulator and the circuit to be supplied with the power may be defective.

2. Excessive output offset of 1-bit amplifier

After disconnecting the CNPV99 (speaker output connector of 1-bit amplifier), turn on the unit power for the normal operation. (No sound is heard from the speaker.)

* After repairing, adjust the output offset voltage of 1-bit amplifier as shown on page 24.
  If the protective operation is observed even after disconnecting the CNPV99, circuits QV95 to 98 (DC voltage detection of speaker output) may be defective.

3. Excessive main supply current of 1-bit amplifier

After disconnecting the CNP801 (main power source connector of 1-bit amplifier), turn on the unit power for the normal operation. (No sound is heard from the speaker.)

* After repairing, adjust the output offset voltage of 1-bit amplifier as shown in page 30.
  If the protective operation is observed even after disconnecting the CNP801, the circuit of ICV98/ICV99 (supply current detection circuit) may be defective.

4. Abnormalities of cooling fan motor and its driving circuit (stop, etc.)

Turn on the unit to visually inspect the cooling fan motor till the protective operation starts.

* If the fan is rotating forcefully;
  QV94, contact of the CNPV97 (connector for fan motor), or fan may be defective. (CNPV97 pin 3 potential during normal fan operation is approx. 0 V.)

* When the fan is not rotating or seems to be stopping.
  If it is checked that the CNPV97 (connector for fan motor) is not defective and it is also checked by oscilloscope, etc that voltage of pin 1 (red line of fan) is approx. 6 V, the fan may be defective.

  When the voltage of the CNPV97 pin (1) is far lower than 6 V, and base voltage of QV93 is almost the same as that shown in the circuit diagram, the fan or the circuit consisting of PSV801, QV85, QV87, and QV93 may be defective.

  When the base voltage of QV85 is 0 V or extremely lower than the value shown in the circuit diagram (3.5 V), the system control terminal of SOV90 may be defective.

1-BIT AMP. SECTION

Wiring diagram of the 1-bit Amp. unit

After the wires from the 1-bit amp PWB are wound around the cores as shown in Fig. 19, secure them to the chassis of amp unit with nylon bands (4 pcs).

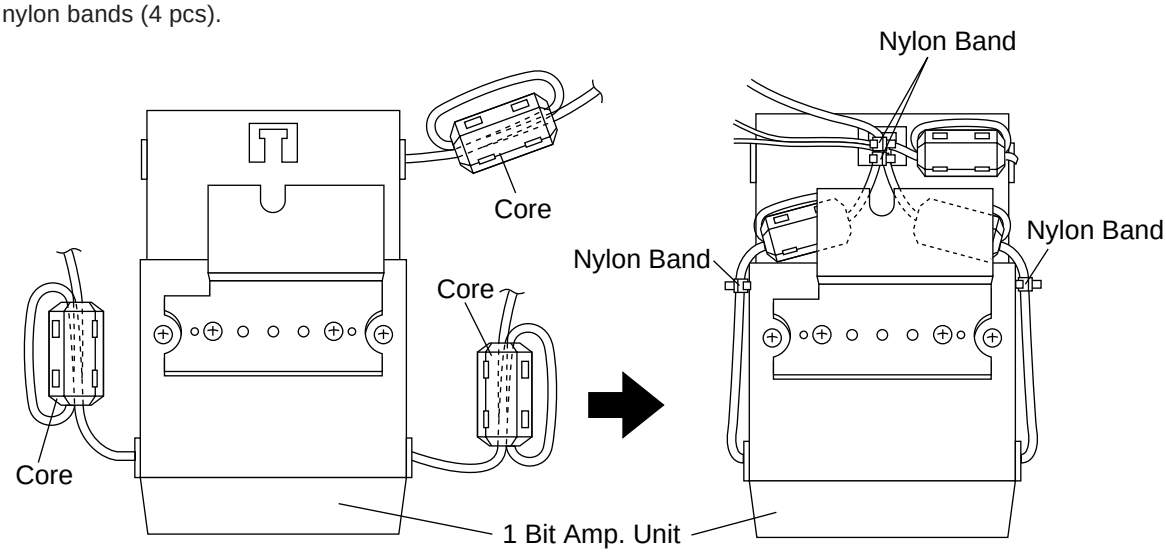


Figure 19

TEST MODE

From power off state to TEST mode

Press the +10 Track Up button (+10) and MD REC LEVEL/MD Fast Forward button (▶▶|) simultaneously while the POWER button of the main unit is on to obtain the TEST mode. Initially, the version is displayed.
Thereafter press the MD REC LEVEL/MD Fast Forward button (▶▶|) to select the TEST mode and then press the +10 Track Up button (+10) to determine it.
Press the DIRECT key during version display to obtain the designated TEST mode directly.

TEST MODE

No.	TEST MODE	DIRECT KEY	DISPLAY
1	CD TEST	CD PLAY (CD ▶ ❚❚)	CD MENU
2	MD TEST	MD PLAY (MD ▶ ❚❚)	MD MENU
*3	MD DISP TEST	ERASE	MD DIS MENU
*4	REC AGING	MD REC (● REC)	REC MENU
5	AUX TEST	AUX (DEMO)	AUX MENU
*6	CALENDAR TEST	CD STOP (CD ■)	DATE MENU
7	KEY TEST	VOLUME UP (VOLUME ∧)	KEY MENU
8	TUNER TEST	TUNER/BAND	TUN MENU
*9	LINE TEST	MD STOP (MD ■)	MD-LINE MENU
*10	R/P AGING	REC MODE	AGING MENU
*11	CD LID TEST	CD-OP/CL(▲)	OP/CL MENU

The TEST modes 3, 4, 6, 9, 10, and 11 marked with * are under technical examination; their descriptions are omitted.

Cancelling the TEST mode

In each TEST mode, press the POWER button to display COMPLETE for 1 second and then cancel the TEST mode.
In the MD TEST mode, press the POWER button again.

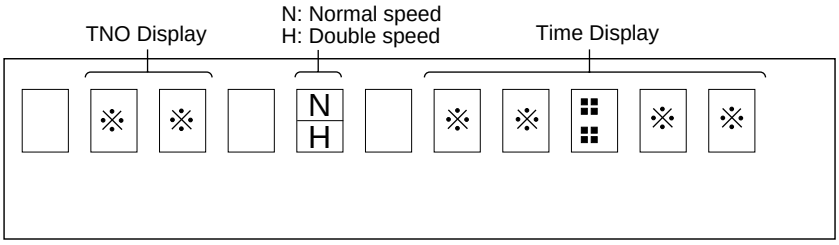
CX1 11.08
Test mode
Version display
SKIP-DWN
With SKIP-UP button
Version display to CD-PLAY
CD MENU
SKIP-UP
SKIP-DWN
Version display to MD-PLAY
MD MENU
SKIP-UP
SKIP-DWN
Version display to ERASE
MD DIS MENU
SKIP-UP
SKIP-DWN
Version display to MD-REC
REC MENU
SKIP-UP
SKIP-DWN
Version display to AUX(DEMO)
AUX MENU
SKIP-UP
SKIP-DWN
Version display to CD-STOP
DATE MENU
SKIP-UP
SKIP-DWN
Version display to VOL-UP
KEY MENU
SKIP-UP
SKIP-DWN
Version display to TUNER/BAND
TUN MENU
SKIP-UP
SKIP-DWN
Version display to MD-STOP
M_LINE MENU
SKIP-UP
SKIP-DWN
Version display to REC-MODE
AGING MENU
SKIP-UP
SKIP-DWN
Version display to CD-OP/CL
OP/CL MENU

Figure 20

1. CD test

Outline: Readout of the set value after automatic adjustment (for judging difference from initial value)
Forced operation of pickup (Inner/Outer circumference feed)
During the PLAY mode, the number of errors accumulated for 10 seconds (750 frames) is displayed.

Basic CD operation by CD-PLAY button
During the TEST mode, the display is turned on and the following buttons become effective.



Operation

1. CD-PLAY: CD operation according to steps
   STEP 1: LD ON by pressing CD PLAY button in the stop mode
   STEP 2: Focus ON by pressing CD PLAY button in STEP 1
   STEP 3: CLV servo ON by pressing CD PLAY button in STEP 2
   STEP 4: Tracking servo ON by pressing CD PLAY button in STEP 3
   STEP 5: Sub-code readout/display by pressing CD PLAY button in STEP 4
   * Keep pressing the CD PLAY button for more than 1 second to shift to STEP 5 directly.
2. CD STOP : To stop the playback operation (shifting from each step to the stop mode) / To reset display (during display of coefficient)
3. CD SKIP-UP (TUNING ∧ / ▶▶|) : Forcible shift in the pickup FWD direction
4. CD SKIP-DOWN (TUNING ∨ / |◀◀) : Forcible shift in the pickup REV direction Sliding is stopped when the PU_IN switch is turned on.
5. MD-STOP : Automatic adjustment (at the present pickup position)
6. POWER : Canceling the test mode
7. REC MODE : To read the coefficient register while the CD operation is stopped/ To display the error number during CD playback
8. VOLUME UP/DOWN : Normal volume control
9. CD/MD OPEN/CLOSE : Normal open/close operation
10. CD EJECT : Normal CD eject

Readout of the adjusted value

Press the REC-MODE button during the stop mode to read the following items.
Press the C-STOP button to return to the normal display.

Item	Display	Max	Type	Min
Focus balance	_ _ F B : ××	7 F	0 0	8 0
Focus gain	_ _ F G : ××	1 F	0 0	E 0
Tracking balance	_ _ T B : ××	7 F	0 0	8 0
Tracking gain	_ _ T G : ××	1 F	0 0	E 0
Focus offset	F O F F : ××	7 F	0 0	8 0
Tracking offset	T O F F : ××	7 F	0 0	8 0
RFRP	R F R P : ××	7 F	0 0	8 0

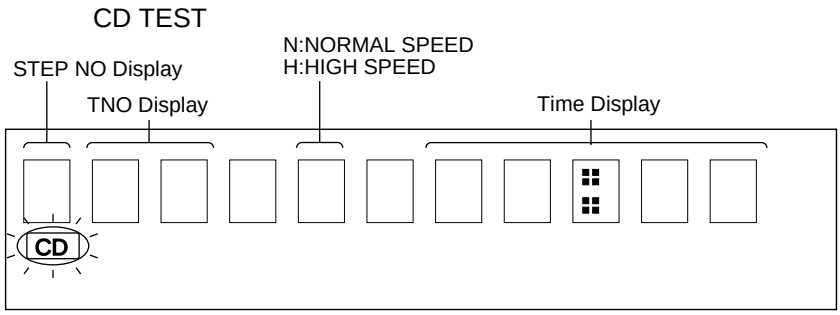
Even if the CD-PLAY button is pressed initially, automatic adjustment is not obtained. Press the MD-STOP button in the stop mode to gain CD-PLAY for automatic adjustment. Thereafter press the CD-STOP button to stop automatic adjustment. Press the REC-MODE button to display automatically adjusted values.

Readout of error numbers

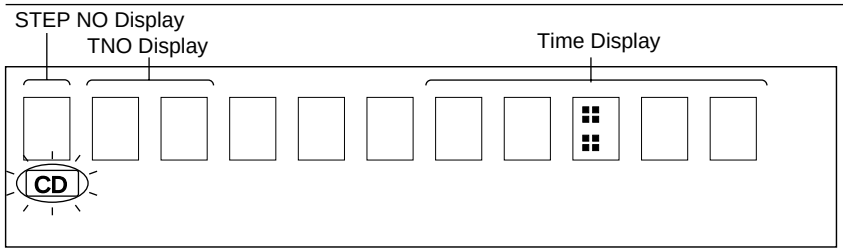
Press the REC-MODE button during playback to display the number of errors accumulated for 10 seconds (750 frames).
Press the REC-MODE button during ERR display to return to the normal TEST mode display.

Double-speed mode

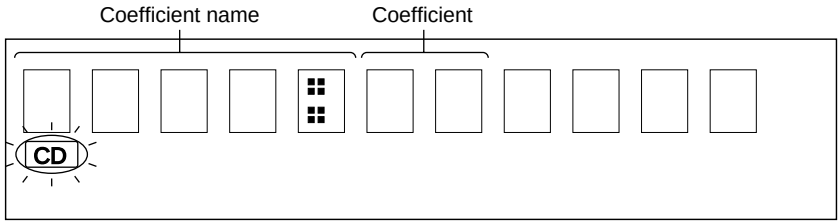
Press the MD-REC button in the stop mode to switch to the double/constant-speed mode cyclically.
During the double-speed mode, a flag mark lights up.



[CD] Flashing



1. STEP No. : 0 when stopped
2. Time display: Blank from the stop mode to STEP 4



Readout of coefficient.

2. MD test mode (Refer to page 25 and after.)

Button used during MD test mode

Button Name	Function
CD PLAY	To feed the menu of the TEST mode (1) (to feed the menu relating to adjustment and EEPROM)
TUNER/BAND	To feed the menu of the TEST mode (2) (to feed the menu mainly relating to continuous playback and recording)
AUX/DEMO	To feed the menu of the TEST mode (3) (to feed the menu of INNER and JUMP SELECT, etc.)
MD REC	To feed the menu of the TEST mode in reverse (to feed the menu in each test mode in reverse)
MD PLAY	To select, determine and start the menu
MD STOP	To stop each test item and to select the next upper menu
MD SKIP-UP (▶▶|)	1. Forced slide feeding (FWD) 2. JUMP operation 3. Address setting value up, etc.
MD SKIP-DOWN (|◀◀)	1. Forced slide feeding (REV) 2. JUMP operation 3. Address setting value down, etc.
VOLUME UP	1. Forced UNLOAD of DISC 2. Set value UP
VOLUME DOWN	1. Forced LOAD of DISC 2. Set value DOWN
CD STOP	1. To switch laser by EJECT 2. To switch display during continuous playback, etc.
POWER	To operation mode without automatic adjustment
MD EJECT	Normal EJECT operation

5. AUX test mode

Outline: To test the AUX operation

Operation

a. Press the VOL-UP/DOWN button.
   MIN (0) ←→ 1 ←→ 250 ←→ MAX (40)
   (The volume can be switched among 4 levels.)
b. Switching of the graphic equalizer and switching test for X-BASS ON/OFF and SURROUND ON/OFF are possible.
c. Press the POWER button to exit the AUX test mode.

7. KEY test

Outline: To check if KEY data are input to the microcomputer accurately

Operation

All lights of segments on FL go off while the keys are not effective.
Segments corresponding to the keys are lit up as shown below.
The power button is an exception; 2 seconds after all lights are lit, the TEST mode is cancelled.

KEY	Segment
POWER	TEST mode cancelled 2 seconds after all lights are lit
VOLUME UP	kHz
VOLUME DOWM	MHz
TUNER/BAND	[FM]
AUX (DEMO)	[AUX]
ERASE	TOC
MD EJECT	AM
MD PLAY	PM
MD STOP	[MD]
MD REC	REC MARK
REC MODE	LP2
PLAY-MODE	REPEAT MARK
+10	LP4
CD-OP/CL	RANDOM
CD EJECT	FLAG MARK
CD PLAY	PLAY MARK
CD STOP	[CD]
CD SKIP-UP (TUNING ∧ / ▶▶I)	[ST]
CD SKIP-DOWN (TUNING ∨ / I◀◀)	STEREO

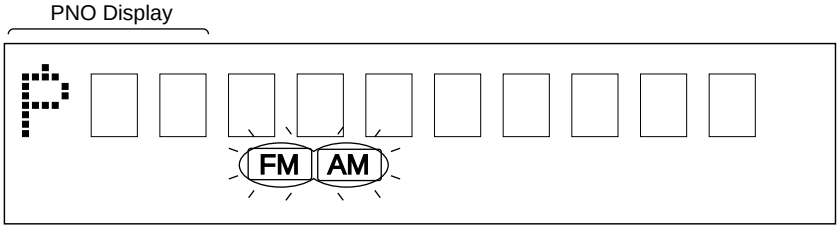
8. TUNER TEST

Outline: To test the accurate operation of the tuner

The following presets are written.
a. Reception of Preset 1.
b. Press the POWER button to cancel the TEST mode. In this case, preset is entirely erased.

Tuner TEST mode Preset memory										
P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11
87.50	108.00	90.00	106.00	98.00	522k	1620k	603k	1404k	990k	

Flashing is done if FM 87.50 MHz can't be received.



TUN TEST

The flashing display of FM/AM

Figure 23 TEST MODE MENU

ADJUSTMENT

TUNER SECTION

fL: Low-range frequency
fH: High-range frequency

• AM IF/RF
Signal generator: 400 Hz, 30%, AM modulated

Adjusting Item	Adjusting object	Adjusting method
AM IF	T351 Indication of set must be 1,620 kHz	IF wavefome 450 kHz is set to max.
AM Band Coverage (Voltage of TP302 VT line)	fL: T306 (522 kHz) Set Display of 522 kHz	fL: 1.3V ± 0.1V fH: 8.5V ± 1.3V (fH is only check)
AM Tracking	fL: T302 (990 kHz)	Set output of Headphones terminal to maximum.

• FM Mute Level
FM Signal oscillator Frequency 400 Hz, 22.5 kHz

Adjusting method	Adjusting method	Adjusting object	Adjusting object
98.0 MHz (30 dB)	98.0 MHz	VR351	Input: SO301A Output: Headphones terminal

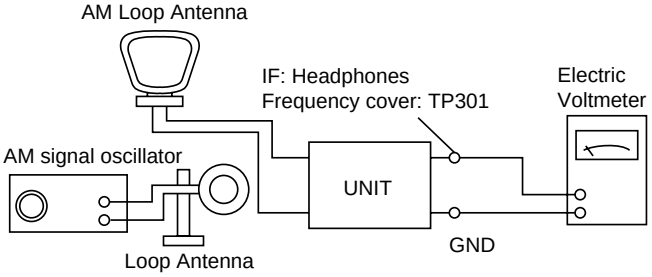


Figure 24-1 AM IF/RF

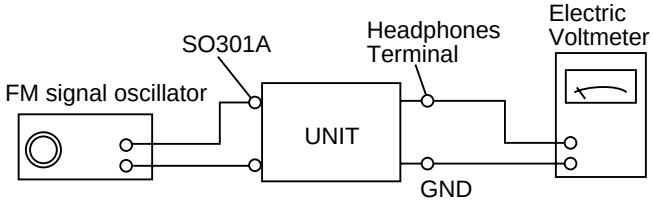


Figure 24-2 FM Mute Level

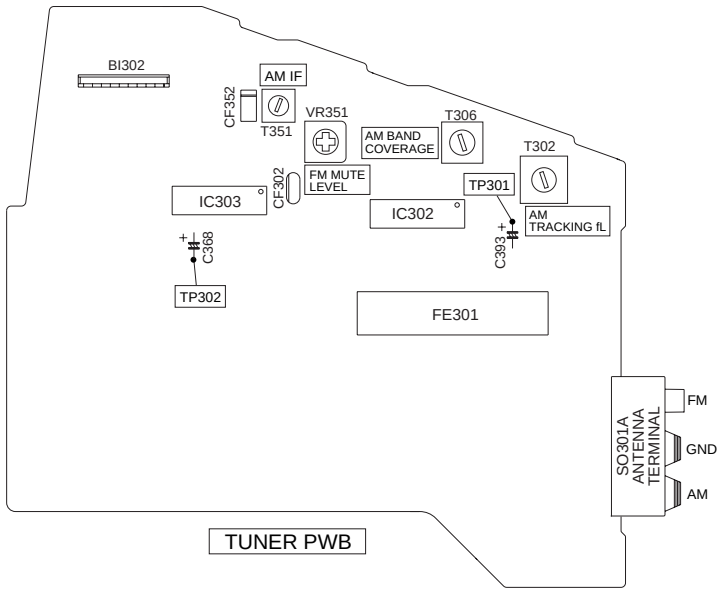


Figure 24-3 ADJUSTMENT POINT

• Setting the Test Mode
When setting the tuner test mode, the frequencies are initialized in the memory as shown in Table 24. Refer to the microcomputer test mode function on pages 19 and 23.
If the initialization is executed, the frequencies registered by the user are changed.

Preset. memory	FM frequency	Preset. memory	AM frequency
P01	87.50 MHz	P06	522 kHz
P02	108.00 MHz	P07	1,620 kHz
P03	90.00 MHz	P08	603 kHz
P04	106.00 MHz	P09	1,404 kHz
P05	98.00 MHz	P10	990 kHz

Table 24

• To erase the registered broadcast stations
When exiting from the test mode, all preset data is erased.

1-BIT AMP. SECTION

● 1-bit amp. output offset voltage adjustment
Applying AC 100V, adjust the VRA100/101 so that the voltage between + and - of the speaker output terminal (BIA110) is within 0 ± 5mV.

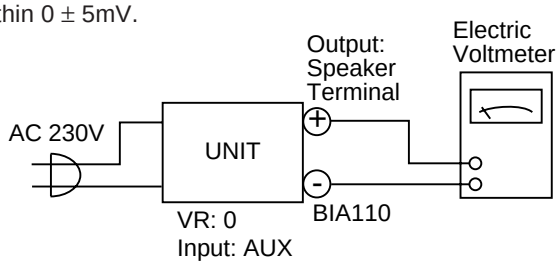


Figure 24-4 Output Offset Lelel

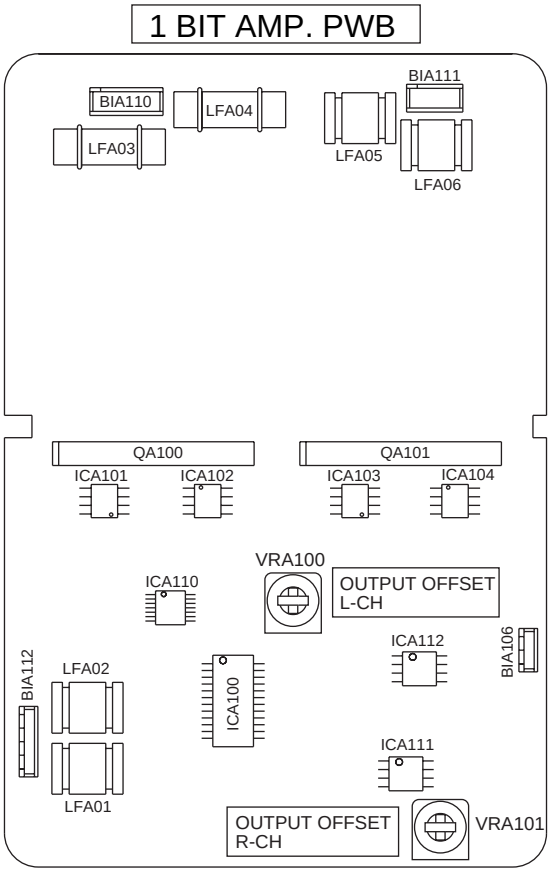


Figure 24-5 ADJUSTMENT POINT

CD SECTION

Since this CD system has the built-in automatic adjustment function, readjustment is not necessary when replacing the pickup. Therefore, any combinations of PWB and pickup can be made.
Since automatic adjustment is executed every time the disc is changed, each disc can be played in the most appropriate condition.

MD SECTION

Enter the test mode, adjust or set as shown in the following table according to the repair operations.

Execution item required / Repair operations	TEMP basic setting	Checking EEPROM setting	Writing the EEPROM setting	AUTO-YOBI adjustment	AUTO-adjustment	AUTO-FAB adjustment	Writing the EEPROM setting	Operation check	
	TEMP	EEPROM_SET	TEST-CANCEL	AUTO–YOBI	AUTO–ADJ	AUTO–FAB	TEST-CANCEL	TEST-PLAY	TEST-REC
PICK replacement	–	①	②	③	④	⑤	⑥	⑦	⑧
HEAD replacement	–	–	–	–	–	–	–	–	①
MECHANISM replacement	–	①	②	③	④	⑤	⑥	⑦	⑧
MAIN PWB assembly replacement	①	②	③	④	⑤	⑥	⑦	⑧	⑨
MD microcomputer replacement	–	①	–	–	–	②	③	④	⑤
MD LSI replacement	–	–		①	②	③	④	⑤	⑥
RF IC replacement	①	②	③	④	⑤	⑥	⑦	⑧	⑨
EEPROM IC replacement	①	②	③	④	⑤	⑥	⑦	⑧	⑨

number ① to ⑧ and ⑨ indicate the order of inplementation.
" – " is an item that you don't have to execute.

The EEPROM writing result is shown at the end of the test mode
OK_EEPROM: "SET" and "YOBI COMPLETE" were written normally
WR_EEPROM: Although "SET" was written normally, it was not written in the "YOBI COMPLETE" state.
→ Peform "AUTO-YOBI" adjustment. After making a normal adjustment, write the preliminary adjustment into the EEPROM.
NG_EEPROM: "SET" could not be written.
→ Check the connection between the MD microcomputer and the EEPROM.

Extension Cable

	Type	Part No.
1	Extension PWB for servicing	RUNTK0532AFZZ
2	Extension Connector (2 Pin)	QCNWK0129AFZZ
3	Extension Flat Cable (6 Pin)	QCNWK0130AFZZ
4	Extension Flat Cable (5 Pin)	QCNWK0109AFZZ
5	Extension Flat Cable (28 Pin)	QCNWK0108AFZZ

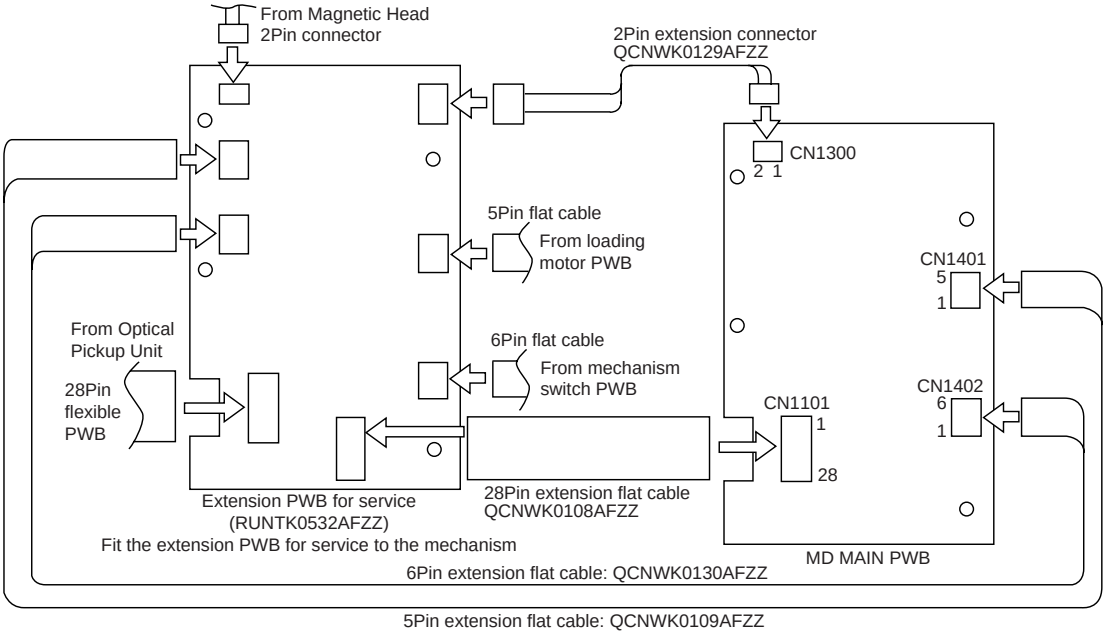


Figure 25 EXTENSION CABLE

SD-CX1H

1. Preparation for adjustment

Test disc

	Type	Test disc	Part No.
1	High reflection disc	TGYS1 (SONY) [for Playback]	RRCDT0101AFZZ
2	Low reflection disc	MiniDisc for checking the recording operation (commercially available MD)	————————
3	————————	Head Adjusting transparent	RRCDT0103AFZZ
4	Low reflection disc	Pre-adjustment disc [TEAC Test MD]	88GMMD-213AS or 88GMMD-318

2. Test Mode

Test mode setting method

1. While the +10 forward button (+10) and the REC LEVEL/MD Fast Forward button (▶▶|) are pressed down together, press the POWER button and then MD PLAY button. (State Ⓐ is changed to state Ⓑ.)
2. Insert the playback-only disc 1 (high reflection disc) or the recordable disc 2 (low reflection disc). (State is changed to Ⓒ.)

Above procedures will set the unit to the test mode.

Ⓐ tsm 22○○e○○ : TEST MODE ○○ represents version of MD microcomputer.
↓ STOP state
Ⓑ EJECT
↓
Ⓒ AUT AJST

(When the MD STOP button is pressed in the Ⓒ state, the indication Ⓐ is restored. To restore Ⓒ again, press the CD PLAY/PAUSE button.)

● Entering the specific mode

Whenever the CD PLAY/PAUSE button is pressed, the mode is changed.
If the REC button is pressed instead, the mode will change in the opposite order.

AUTO YOBI (AUTO prelimirary adjustment) → AUTO AJST (AUTO adjustment) → AUT AFB (Advanced AFB adjustment) → RST YOBI (RESULT YOBI) → RESULT

ERR DATA (ERRER DATA) ← EEPROM_SET (EEPROM setting) ← MAN AFB (MANUAL advanced AFB adjustment) ← MNU AJST (MANUAL AFB adjustment) ← MNU YOBI (MANUAL prelimirary adjustment) ←

● Cancel of test mode

The mode is written on EEPROM by pressing the POWER button. If the POWER button is pressed again, the unit returns to the normal state.

* Before pressing the POWER button, make sure that the AUTO pre-adjustment, AUTO adjustment, and AUTO AFB adjustment have been completed.
* After the value of EEPROM is changed or the AUTO pre-adjustment, AUTO adjustment, and AUTO AFB adjustment are performed again, write on EEPEOM by pressing the POWER button. (When the POWER button is pressed, data is written on EEPROM.)
* When the value of EEPROM has been changed, write the data on EEPROM once. To perform adjustment using the data, set the unit to the TEST mode again, perform AUTO pre-adjustment, AUTO adjustment, and AUTO AFB adjustment, and then write the data again on EEPROM.

• Test Mode

1. EJECT mode	• TEMP setting (of EEPROM setting) • CONTROL setting (of EEPROM setting) • Setting of laser power (record/playback power)
2. AUTO pre-adjustment mode	• Automatic pre-adjustment is performed.
3. AUTO adjustment mode	• Automatic adjustment is performed. (After adjustment the grating adjustment mode is set.)
4. AUTO AFB adjustment mode	• Focus adjustment is performed.
• RESULT sub-mode • RESULT mode (final adjustment) • MANUAL pre-adjustment mode • MANUAL adjustment mode • MANUAL AFB adjustment mode • ERROR DATA	• Therefore do not set this mode since it is not necessary for the service.
5. EEPROM setting mode	• Various coefficients of digital servo are changed manually.
6. TEST-PLAY mode	• Continuous playback from the specified address is performed. • C1 error rate measurement, ADIP error rate measurement.
7. TEST-REC mode	• Continuous recording from the specified address is performed.
8. INNER mode	• The position where the INNER switch is turned on is measured.

1. EJECT mode

Step No.	Setting Method	Remarks	Display
Step 1	Test mode EJECT state		[_ _ E J E C T _ _ _]
Step 2	Press the CD STOP button.	Playback power output state	[p p w _ _ _ _ _ _ _]
Step 3	Press the CD STOP button.	Rec power output state	[r p w _ _ _ _ _ _ _]
Step 4	Press the CD STOP button.	Therefore do not set this mode since it is not necessary for the service.	[x p w _ _ _ _ _ _ _]
Step 5	Press the TUNER (BAND) button.	TEMP setting of EEPROM setting (The TEMP setting reference of the EEPROM.)	
Step 6	Press the AUX (DEMO) button.	CONTROL setting of EEPROM setting (The CONTROL setting reference of the EEPROM.)	

* Normally, the voltage at pin 3 of IC1401 becomes as follows:
  Playback power output (ppw): Approx. DC 0.2V
  Recording power output (rpw): Approx. DC 1.8V

Confirmation of pickup laser power

It is possible to confirm in the record/playback mode with the aid of laser power meter. However, since the laser power meter measurement is characterized with dispersion, obtained data are used only for confirmation.

Reference data (at room temperature 25°C)
Playback: 0.72±0.1 mW
Record: 5.5±0.5 mW

Note:

Never see directly the laser light. Otherwise your eyes are injured.

2. AUTO pre-adjustment mode (Low reflection disc only)

With the pre-adjustment disc (MMD213A or MMD-318)

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state		[t s m ○○○○ e ○○]
Step 2	Press once the CD PLAY button.	AUTO adjustment menu	[A U T O _ A J S T _]
Step 3	Press the MD REC button.	AUTO pre-adjustment menu	[_ A U T _ Y O B I _]
Step 4	Press once the MD PLAY button. End of adjustment	• During automatic adjustment ✳✳✳ changes as follows. HAo→ • • • • • • • • • • →TCO If adjustment is OK, Step 5. If adjustment is NG, Step 6.	[✳✳✳ : _ _ _ _ _ _]
Step 5	Press the MD STOP button.	STEP 2	[_ C O M P L E T E _]
Step 6	Adjustment value output Press the MD STOP button.	 STEP 2 AUTO adjustment menu	[C a n ' t _ A D J .]

• ✳✳✳ : Adjustment name

3. AUTO adjustment mode

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state		[t s m ○○○○ e ○○]
Step 2	Press once the CD PLAY button.	AUTO adjustment menu	[A U T O _ A J S T _]
Step 3	Press once the MD PLAY button. End of adjustment	• In case of high reflection disc ✳✳✳ changes as follows. PEG→HAG • In case of low reflection disc ✳✳✳ changes as follows. PEG→LAG If adjustment is OK, Step 4. If adjustment is NG, Step 7.	[✳✳✳ : _ _ _ _ _ _]
Step 4	 Press the MD PLAY button. Press the MD STOP button.	For grating adjustment STEP 5 STEP 2	[_ C O M P L E T E _] *Note 1
Step 5	Continuous playback (pit section) Continuous playback (groove section)	Confirmation of C1 error	[s □□□□ c ○○○○] [a □□□□ c ○○○○]
Step 6	Press the CD STOP button. Press the MD STOP button.	Conformation of ADIP error (Low reflection only) STEP 2 AUTO adjustment menu	[a □□□□ a ○○○○]
Step 7	Adjustment value output Press the MD STOP button.	 STEP 2 AUTO adjustment menu	[C a n ' t _ A D J .]

• ✳✳✳ : Adjustment name, ○○ : Measurement value, □□□□ : Address

*** Note 1:**

Depending on the disc, "#COMPLETE_" may be displayed, which means that the ON position of the INNER switch cannot be identified clearly. In this case, check the switch in the INNER mode using the specified disc. However, this is not a problem in AUTO adjustment.

4. AUTO AFB adjustment mode

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state		[t s m ○○○○ e ○○]
Step 2	Press the CD PLAY button two times.	AUTO AFB adjustment menu	[_ A U T _ A F B _ _]
Step 3	Press once the MD PLAY button.		[F A B ○○ _△△△△]
Step 4	Adjustment value output Press the MD STOP button.	STEP 2 AUTO AFB adjustment	[○○ _ △△△△△△△△]

• ○○ , △△△△ : Measurement value

5. EEPROM setting mode

a) Focus setting

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[t s m ○○○○ e ○○]
Step 2	Press the CD PLAY button eight times.	[E E P R O M_ S E T]
Step 3	Press the MD PLAY button.	[_ _ F o c u s _ _ _]
Step 4	Press the MD PLAY button.	[F G _ _ _ _ _ _ ◆◆]
Step 5	Press the CD PLAY button.	[F G 2 _ _ _ _ _ ◆◆]
Step 6	Press the CD PLAY button.	[F F 0 _ _ _ _ _ ◆◆]
Step 7	Press the CD PLAY button.	[F F 1 _ _ _ _ _ ◆◆]
Step 8	Press the CD PLAY button.	[F F 2 _ _ _ _ _ ◆◆]
Step 9	Press the CD PLAY button.	[F Z H L E V _ _ ◆◆]
Step 10	Press the CD PLAY button.	[F O K L E V h _ ◆◆]
Step 11	Press the CD PLAY button.	[F O K L E V L _ ◆◆]
Step 12	Press the CD PLAY button.	[F O S T n _ _ _ ◆◆]
Step 13	Press the CD PLAY button.	[D S C J G _ _ _ ◆◆]

• ◆◆ : Setting value

b) Spin setting

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[t s m ○○○○ e ○○]
Step 2	Press the CD PLAY button eight times.	[E E P R O M_ S E T]
Step 3	Press the MD PLAY button.	[_ _ F o c u s _ _ _]
Step 4	Press the CD PLAY button.	[_ S p i n d l e _ _]
Step 5	Press the MD PLAY button.	[S P G _ _ _ _ _ ◆◆]
Step 6	Press the CD PLAY button.	[S P G _ i n _ _ ◆◆]
Step 7	Press the CD PLAY button.	[S P G _ m i d _ ◆◆]
Step 8	Press the CD PLAY button.	[S P G _ o u t _ ◆◆]
Step 9	Press the CD PLAY button.	[S P G M _ _ _ _ ◆◆]
Step 10	Press the CD PLAY button.	[S P 1 _ _ _ _ _ ◆◆]
Step 11	Press the CD PLAY button.	[S P 2 _ _ _ _ _ ◆◆]
Step 12	Press the CD PLAY button.	[S P 2 2 _ _ _ _ ◆◆]
Step 13	Press the CD PLAY button.	[S P 3 _ _ _ _ _ ◆◆]
Step 14	Press the CD PLAY button.	[S P 4 _ _ _ _ _ ◆◆]
Step 15	Press the CD PLAY button.	[S P 5 _ _ _ _ _ ◆◆]
Step 16	Press the CD PLAY button.	[S P 5 2 _ _ _ _ ◆◆]
Step 17	Press the CD PLAY button.	[S P D L I M _ _ ◆◆]
Step 18	Press the CD PLAY button.	[S P K L E V m _ ◆◆]

• ◆◆ : Setting value

C) Tracking setting

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[t s m ○○○○ e ○○]
Step 2	Press the CD PLAY button eight times.	[E E P R O M_ S E T]
Step 3	Press the MD PLAY button.	[_ _ F o c u s _ _ _]
Step 4	Press the CD PLAY button two times.	[_ T r a c k i n g _]
Step 5	Press the CD PLAY button.	[T G _ _ _ _ _ ◆◆]
Step 6	Press the CD PLAY button.	[T G 2 _ _ _ _ ◆◆]
Step 7	Press the CD PLAY button.	[T F 0 _ _ _ _ ◆◆]
Step 8	Press the CD PLAY button.	[T F 1 _ _ _ _ ◆◆]
Step 9	Press the CD PLAY button.	[T F 2 _ _ _ _ ◆◆]
Step 10	Press the CD PLAY button.	[F T 3 _ _ _ _ ◆◆]
Step 11	Press the CD PLAY button.	[S V C N T 4 _ _ ◆◆]
Step 12	Press the CD PLAY button.	[T R B L V o _ _ ◆◆]
Step 13	Press the CD PLAY button	[T R B L V t _ _ ◆◆]
Step 14	Press the CD PLAY button	[T R K L V o _ _ ◆◆]
Step 15	Press the CD PLAY button	[T R K L V t _ _ ◆◆]
Step 16	Press the CD PLAY button	[T D P W o _ _ _ ◆◆]
Step 17	Press the CD PLAY button	[T D P W t _ _ _ ◆◆]
Step 18	Press the CD PLAY button	[S L C T o _ _ _ ◆◆]
Step 19	Press the CD PLAY button	[S L C T t _ _ _ ◆◆]
Step 20	Press the CD PLAY button.	[S L C T m _ _ _ ◆◆]
Step 21	Press the CD PLAY button.	[T C R S C 1 P _ ◆◆]
Step 22	Press the CD PLAY button.	[T C R S C 0 h _ ◆◆]
Step 23	Press the CD PLAY button.	[T C R S C 0 L _ ◆◆]
Step 24	Press the CD PLAY button.	[T C R S C H h _ ◆◆]
Step 25	Press the CD PLAY button.	[T C R S C H L _ ◆◆]
Step 26	Press the CD PLAY button.	[C O T L V p _ _ ◆◆]
Step 27	Press the CD PLAY button.	[C O T L V r _ _ ◆◆]
Step 28	Press the CD PLAY button.	[J P i n t _ _ _ ◆◆]
Step 29	Press the CD PLAY button.	[K I K 1 0 _ _ _ ◆◆]

• ◆◆ : Setting value

d) Sled setting

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[t s m ○○○○ e ○○]
Step 2	Press the CD PLAY button eight times.	[E E P R O M_ S E T]
Step 3	Press the MD PLAY button.	[_ _ F o c u s _ _ _]
Step 4	Press the CD PLAY button three times.	[_ _ _ S l e d _ _ _]
Step 5	Press the MD PLAY button.	[S L G _ _ _ _ _ ◆◆]
Step 6	Press the CD PLAY button.	[S L 2 _ _ _ _ _ ◆◆]
Step 7	Press the CD PLAY button.	[S L D L I M _ _ ◆◆]
Step 8	Press the CD PLAY button.	[S L D L E V _ _ ◆◆]
Step 9	Press the CD PLAY button.	[S L K L V k _ _ ◆◆]
Step 10	Press the CD PLAY button.	[S L K L V t _ _ ◆◆]
Step 11	Press the CD PLAY button.	[S L K L V m _ _ ◆◆]
Step 12	Press the CD PLAY button.	[S L B K m _ _ _ ◆◆]
Step 13	Press the CD PLAY button.	[S L K r i o _ _ ◆◆]
Step 14	Press the CD PLAY button.	[S L K r o i _ _ ◆◆]
Step 15	Press the CD PLAY button.	[S L K l i o _ _ ◆◆]
Step 16	Press the CD PLAY button.	[S L K l o i _ _ ◆◆]
Step 17	Press the CD PLAY button.	[I N N E R 1 _ _ ◆◆]
Step 18	Press the CD PLAY button.	[I N N E R u _ _ ◆◆]
Step 19	Press the CD PLAY button.	[E J _ W A I T _ ◆◆]

• ◆◆ : Setting value

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e) TEMP setting

Step No.	Setting Method	Display
Step 1	EJECT state (or state without mechanism)	[_ _ E J E C T _ _ _]
Step 2	Press the TUNER (BAND) button.	[T E M P_ ○○ _ ◆◆]

• ◆◆ : Setting value, ○○ : Measurement value

f) CONTROL setting

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[t s m ○○○○ e ○○]
Step 2	Press the CD PLAY button eight times.	[E E P R O M_ S E T]
Step 3	Press the MD PLAY button.	[_ _ F o c u s _ _ _]
Step 4	Press the CD PLAY button five times.	[_ C o n t r o l _ _]
Step 5	Press the MD PLAY button.	[C O N T R L 1 _ ◆◆]
Step 6	Press the CD PLAY button.	[C O N T R L 2 _ ◆◆]
Step 7	Press the CD PLAY button.	[A D J T T M _ _ ◆◆]
Step 8	Press the CD PLAY button.	[H D E Q A D _ _ ◆◆]
Step 9	Press the CD PLAY button.	[L D E Q A D _ _ ◆◆]
Step 10	Press the CD PLAY button.	[G D E Q A D _ _ ◆◆]
Step 11	Press the CD PLAY button.	[G D E Q A D 2 _ ◆◆]
Step 12	Press the CD PLAY button.	[H D E Q B C _ _ ◆◆]
Step 13	Press the CD PLAY button.	[L D E Q B C _ _ ◆◆]
Step 14	Press the CD PLAY button.	[G D E Q B C _ _ ◆◆]
Step 15	Press the CD PLAY button.	[G D E Q B C 2 _ ◆◆]
Step 16	Press the CD PLAY button.	[H A L S G _ _ _ ◆◆]
Step 17	Press the CD PLAY button.	[L A L S G _ _ _ ◆◆]
Step 18	Press the CD PLAY button.	[G A L S G _ _ ◆◆]
Step 19	Press the CD PLAY button.	[H A L S O F S _ ◆◆]
Step 20	Press the CD PLAY button.	[L A L S O F S _ ◆◆]
Step 21	Press the CD PLAY button.	[G A L S O F S _ ◆◆]

• ◆◆ : Setting value

g) ADJUST setting

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[t s m ○○○○ e ○○]
Step 2	Press the CD PLAY button eight times.	[E E P R O M_ S E T]
Step 3	Press the MD PLAY button.	[_ _ F o c u s _ _ _]
Step 4	Press the CD PLAY button six times.	[A D J S E T _ _ _ _]
Step 5	Press the MD PLAY button.	[C O K _ _ _ _ _ ◆◆]
Step 6	Press the CD PLAY button.	[F A T _ _ _ _ _ ◆◆]
Step 7	Press the CD PLAY button.	[T A T _ _ _ _ _ ◆◆]
Step 8	Press the CD PLAY button.	[C A T _ _ _ _ _ ◆◆]
Step 9	Press the CD PLAY button.	[F A B _ _ _ _ _ ◆◆]
Step 10	Press the CD PLAY button.	[S T R _ _ _ _ _ ◆◆]
Step 11	Press the CD PLAY button.	[S F S _ _ _ _ _ ◆◆]
Step 12	Press the CD PLAY button.	[S T C _ _ _ _ _ ◆◆]

• ◆◆ : Setting value

h) REC bit setting

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[t s m ○○○○ e ○○]
Step 2	Press the CD PLAY button eight times.	[E E P R O M_ S E T]
Step 3	Press the MD PLAY button.	[_ _ F o c u s _ _ _]
Step 4	Press the CD PLAY button seven times.	[R E C b i t _ S E T]
Step 5	Press the MD PLAY button.	[S P _ W R 5 0 _ ◆◆]
Step 6	Press the CD PLAY button.	[S P _ W R 5 6 _ ◆◆]
Step 7	Press the CD PLAY button.	[S P _ W R 4 4 _ ◆◆]
Step 8	Press the CD PLAY button.	[S P _ W R 5 3 _ ◆◆]
Step 9	Press the CD PLAY button.	[L P 2 W R 5 0 _ ◆◆]
Step 10	Press the CD PLAY button.	[L P 2 W R 5 6 _ ◆◆]
Step 11	Press the CD PLAY button.	[L P 2 W R 4 4 _ ◆◆]
Step 12	Press the CD PLAY button.	[L P 2 W R 5 3 _ ◆◆]
Step 13	Press the CD PLAY button.	[L P 4 W R 5 0 _ ◆◆]
Step 14	Press the CD PLAY button.	[L P 4 W R 5 6 _ ◆◆]
Step 15	Press the CD PLAY button.	[L P 4 W R 4 4 _ ◆◆]
Step 16	Press the CD PLAY button.	[L P 4 W R 5 3 _ ◆◆]
Step 17	Press the CD PLAY button.	[R V D _ _ _ _ _ ◆◆]

• ◆◆ : Setting value

6. TEST-PLAY mode

(For confirmation of the playback ability at the named address.)

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state		[t s m○○○○e ○○]
Step 2	Press the TUNER (BAND) button.	TEST-PLAY menu	[T E S T _ P L A Y _]
Step 3	Press the CD STOP button. Press the MD PLAY button.	ADDRESS setting (Target address initial value is indicated)	[A D R E S _ 0 0 3 2]
Step 4	Continuous playback (pit section) Continuous playback (groove section)	(Address + C1 error indication) (Address + C1 error indication)	[s □□□□ c ○○○○] [a □□□□ c ○○○○]
Step 5	Press the CD STOP button. Continuous playback (groove section)	(Address + ADIP error indication)	[a □□□□ a ○○○○]
Step 6	Press the MD STOP button.	TEST-PLAY menu	[T E S T _ P L A Y _]

• Whenever the TUNER (BAND) button is pressed in the address setting mode, the address changes as follows.
0 0 3 2 → 0 3 C 0 → 0 7 0 0 → 0 8 A 0 → 0 9 5 0 →0 0 3 2 → ……

7. TEST-REC mode

With recording mini disc (For confirmation of the playback ability at the named address.)

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state		[t s m○○○○e ○○]
Step 2	Press the TUNER (BAND) button two times.	TEST-REC menu	[T E S T _ R E C _ _]
Step 3	Press the CD STOP button.	ADDERS setting (indication of address initial value)	[a 0 0 3 2 _ p w ▽▽]
Step 4	Press the MD PLAY button.	Continuous recording	[a □□□□ _ p w ▽▽]
Step 5	Press the MD STOP button.	TEST-REC menu	[T E S T _ R E C _ _]

• Whenever the TUNER (BAND) button is pressed in the address setting mode, the address changes as follows.
0 0 3 2 → 0 3 C 0 → 0 7 0 0 → 0 8 A 0 → 0 9 5 0 →0 0 3 2 → ……

8. INNER mode

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state		[t s m○○○○e ○○]
Step 2	Press the AUX (DEMO) button.	INNER menu	[_ _ I N N E R _ _ _]
Step 3	Press the MD PLAY button.	INNER switch position measurement (SUBQ address and C1 error are also indicated.)	[s □□□□ c ○○○○]
Step 4	Press the MD STOP button.	INNER menu	[_ _ I N N E R _ _ _]

• □□□□ : Address

SD-CX1H

1. Adjustment

Load a high-reflective TYGS1 test disc.

Note:

Adjust the position of the lead-in switch between FF85 to FFD2.

1. Loosen the screw (A1) x 1 pc., fixing the mechanism switch PWB.
2. Retighten the screw while pushing the PWB in the direction of arrow A if the switch position is at FF85 or lower, or in the direction of arrow B if it is at FFD2 or higher, and measure its position again.
   After adjusting the position, fix it with the screw (A1) x 1 pc. (See Fig. 32-1)

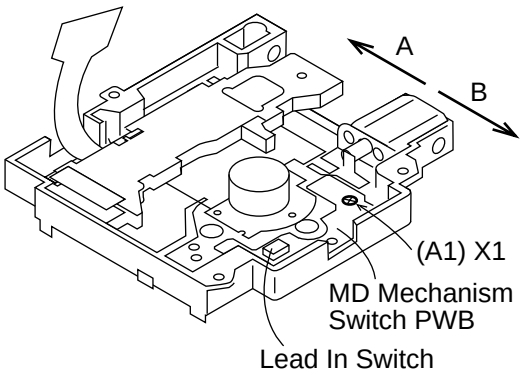


Figure 32-1

2. Confirmation

Check that the display shows "_COMPLETE_" instead of "#COMPLETE_" in step 4 of the AUTO adjustment mode.

● Rotating the loading motor forcibly

The loading motor can be rotated forcibly by rotating the VOL UP/DOWN button while STOP or EJECT in the test mode appears on the display.

● Check of the magnetic head fixing position

- Be sure to check the fixing position of the magnetic head when replacing the magnetic head and the optical pickup.
- Move the optical pickup to the center in order to make the fixing position adjustment easy.

1. Secure the magnetic head to the optical pickup with screw (B1) x 1 pc.
2. Set the transparent disc for checking the head.
3. Lower the magnetic head up shift arm manually to lower the magnetic head.
4. Check whether the magnetic head aligns with the optical pickup objective, seeing the set from above.
5. Check that the magnetic head goes up and down smoothly. (See Fig. 32-2.)

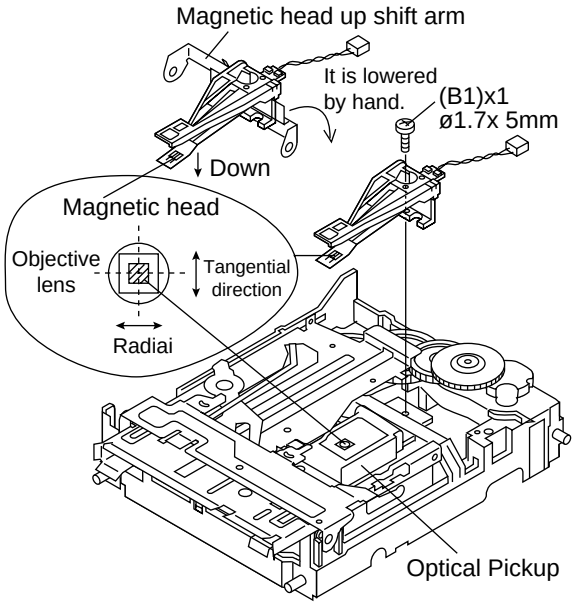


Figure 32-2

● Mechanism Adjustment

1. Optical pickup grating inspecting method

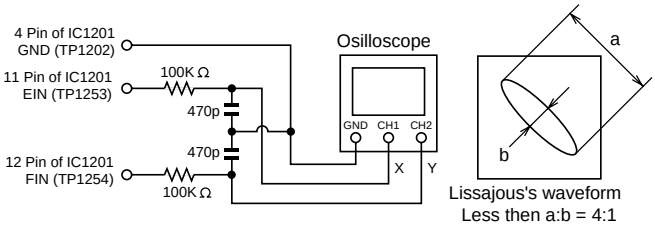


Figure 32-3 Optical Pickup Grating Deviation Measuring Method

After auto adjustment (COMPLETE appears) in the test mode (auto) using the high reflection MD disc TGYS1, adjust the Lissajou's waveform (x-y) of EOUT to FOUT.

1. Slightly loosen the 3 screws of the spindle motor, adjust while observing the Lissajou's waveform.
2. After adjustment, tighten screws 1, 2, and 3 in numerical order. (See Fig. 32-4)

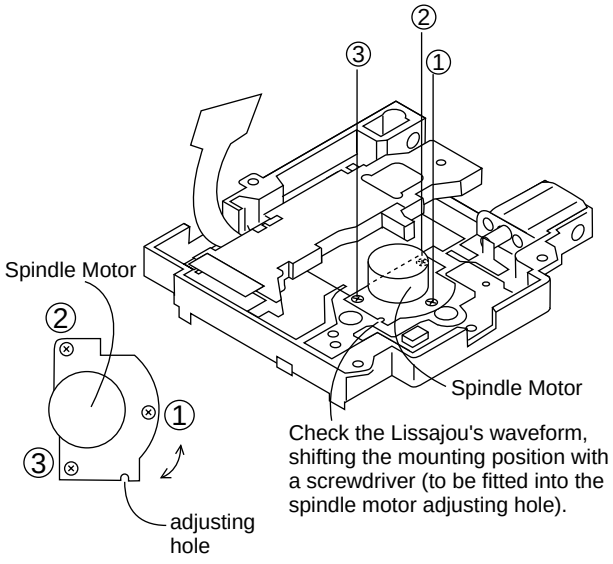


Figure 32-4

ERROR MESSAGE LIST

MD error messages

Error Display	Error Message	Remarks
Can't REC	• Errors occurred 10 times continuously in the REC-PLAY mode. • In the REC-PLAY mode, recording enable cluster became 0 due to errors. • Cannot read the address. The unit cannot enter the REC mode for 20 seconds regardless of repetitive tries.	• Check for scratch, dust, fingerprints, or black spots on the disc. Check that the disc is not eccentric or largely deflected.
Can't COPY	• During the REC-PAUSE or REC-PLAY mode, the disc was judged as follows according to the channel status of the digital signal input at D-IN: 1 It is not an audio disc. 2 It is not for public use. 3 Due to the inversion of COPY bit on the CD, the contents cannot be copied.	• Check if it is the copy-prohibited disc (Example: CD-R etc.).
NO SIG.	• During the REC-PAUSE, REC-PLAY, or CD FUNC playback mode, the following occurred responding to the digital signal input at D-IN: 1 Digital IN PLL is unlocked. 2 PLL is locked even if FS is not 44.1 kHz.	• Check for an abnormality with the D-IN signal line.
TOC FULL	• There is no space left for track numbers or character information (track names, disc name, etc.). • No recordable space was found when entering the REC-PAUSE mode.	• Replace the disc with the one on which the space for recording UTOC is left.
Can't u READ	• FTNO > LTNO has been recognized. • FTNO is not 0 or 1. • Cannot read UTOC recorded on the disc.	• There is an error with UTOC data. Replace the disc.
TOC FROM a	• The start address > end address has been recognized.	• There is an error with UTOC data. Replace the disc.
TOC FROM L0-4	• One of UTOC 0-4 data is looping.	• There is an error with UTOC data. Replace the disc.
NOT AUDIO	• Non-audio data is recorded in the track mode of currently selected track number.	• Select another track number or replace the disc.
? DISC	• The ASCII codes data "MINI" of the system ID written in TOC is not correct. • The disc type written in TOC does not belong to either of the pre-master MD, recording MD or hybrid MD.	• This is a non-standard disc. Replace the disc and check.
DISC FULL	• No recordable space was found when entering the REC-PAUSE mode.	• Replace the disc with the one on which the recording space for UTOC is left.
PROTECT	• You tried recording or editing on a disc with the erase-prevention tab moved. • You tried editing the track that is write-protected due to the information written in UTOC.	• Move the tab back to its original position and try recording or editing again. * Try editing other tracks that are not write-protected.
Can't EDIT	• Conditions in each editing function have not been satisfied.	• The unit is not operated properly. Try again in right procedures.
TEMP OVER	• The temperature inside of the set (MD unit) becomes too high due to an error.	• Check the remedy on the troubleshooting chart. • Is the unit used in a place of high temperature?
Can't READ ✳ (✳ : Number or symbol)	• The read data is not correct, or data has not been read properly. • An error occurred while recording sound data, and the recording could not be completed.	• There may be an error in TOC or UTOC data or scratches on the disc. Replace the disc.
Can't s READ r READ	• The read data is not correct. • TOC information cannot be read. • There may be scratches on the disc. Replace the disc.	• TOC information on the disc does not comply with the MD standard. Replace the disc.
Can't WRITE	• An error occurred while overwriting UTOC, and it could not be overwritten properly.	• There may be scratches on the disc. Replace the disc.
BLANK MD	• Although UTOC is read, total number of letters of TNO and NAME is 0.	• Check that the disc is a recordable disc by recording on it.
Er-MD41	• UTOC can be read but cannot be overwritten.	• Is the recording head positioned properly? Check the connection between the PWB and recording head.
Er-MD80	• EEPROM data is not correct.	• Reset the unit and try again. If it does not restore the unit, replace EEPROM.
MD P ERR	• Due to the abnormality with the power supply, MD unit cannot be operated properly.	• Reset the unit and try again. If it does not restore the unit, the power supply circuit is defective. Check the DC voltage of Q570 Ⓔ , Q550 Ⓔ , and Q853 Ⓔ .

The details description of mechanism error

Error Display	Error Message
E r - M D 1 ✳	Cannot eject the disc.
E r - M D 2 ✳	The head does not ascend.
E r - M D 3 ✳	The head does not descend.

		HINF (93 Pin of IC1401)
✳ = E	EJECT complete position	< 1.0V
✳ = M	LOAD/EJECT halfway position	> 3V
✳ = L	LOAD complete position	1.31 ~ 2.35V
✳ = D	HEAD DOWN position	1.01 ~ 1.3V

EEPROM WRITING PROCEDURE

● EEPROM (IC1402) writing procedure

1. Method for setting the reference temperature value

(This setting should be performed quickly at a room temperature, between 21°C to 29°C when the PWB is not hot.)

1. When replacing the EEPROM, wait until it has cooled down.
2. Connect the main unit using the single MD main PWB.
3. Enter the test mode as shown on page 26.
   "EJECT"
4. Press the TUNER (BAND) button.
   "TEMP ○○ ◆◆"

   ○○: Measured temperature, ◆◆: Temperature setting
5. Find the temperature correction value for the current ambient temperature on the following table. Adjust the temperature correction value using the VOLUME UP/DOWN button.

Ambient Temperature	Correction
+ 21.0 °C ~ + 23.2 °C	-1 H
+ 23.3 °C ~ + 26.8 °C	± 0 H
+ 26.9 °C ~ + 29.0 °C	+1 H

An example: When ambient temperature is 22°C and measured temperature is 7AH
Temperature setting = 7A H - 01 H
= 79 H

* When the measured temperature fluctuates between two values, take lower one (if temperature fluctuates between 7AH and 79H, take 79H).

6. Press the POWER button and write the temperature setting into the EEPROM.

2. Method for making settings other than the reference temperature

1. Install the MD main PWB in the mechanism, and connect it to the main unit.
2. Enter the test mode as shown on page 26, and insert a disc.
   "AUTO AJST"
3. Press the CD PLAY button seven times.
   "EEPROM SET"
4. Set the value according to the EEPROM DATA LIST using the VOLUME UP/DOWN button.
5. Press the POWER button, and the settings will be written into the EEPROM.
6. Enter the test mode again, perform an "AUTO YOBI adjustment", and write the results into the EEPROM.

EEPROM DATA LIST (Version : 01)

Focus setting

Item indication		Setting
F G	○○	9 B H
F G 2	○○	B 1 H
F F 0	○○	1 0 H
F F 1	○○	7 0 H
F F 2	○○	E 0 H
F Z H L E V	○○	E D H
F O K L E V h	○○	0 7 H
F O K L E V L	○○	0 9 H
F O S T n	○○	2 C H
D S C J G	○○	0 D H

Spin setting

Item indication		Setting
S P G	○○	1 1 H
S P G — i n	○○	6 0 H
S P G — m i d	○○	4 B H
S P G — o u t	○○	3 B H
S P G M	○○	9 6 H
S P 1	○○	1 0 H
S P 2	○○	9 3 H
S P 2 2	○○	9 3 H
S P 3	○○	E D H
S P 4	○○	E E H
S P 5	○○	2 0 H
S P 5 2	○○	2 0 H
S P D L I M	○○	6 2 H
S P K L E V m	○○	1 6 H

Tracking setting

Item indication	Setting
TG ○○	49H
TG2 ○○	6BH
TF0 ○○	10H
TF1 ○○	6BH
TF2 ○○	F0H
TF3 ○○	08H
SVCNT4 ○○	01H
TRBLVo ○○	62H
TRBLVt ○○	4CH
TRKLVo ○○	5BH
TRKLVt ○○	2BH
TDPWo ○○	67H
TDPWt ○○	21H
SLCTo ○○	00H
SLCTt ○○	50H
SLCTm ○○	53H
TCRSCIP ○○	16H
TCRSC0h ○○	00H
TCRSC0L ○○	FAH
TCRSCHh ○○	02H
TCRSCHL ○○	02H
COTLVP ○○	0AH
COTLVr ○○	28H
JPint ○○	00H
KIK10 ○○	64H

Sled setting

Item indication	Setting
SLG ○○	46H
SL2 ○○	10H
SLDLIM ○○	7FH
SLDLEV ○○	14H
SLKLVk ○○	60H
SLKLVt ○○	34H
SLKLVm ○○	60H
SLBKm ○○	08H
SLKrio ○○	64H
SLKroi ○○	62H
SLKlio ○○	64H
SLKloi ○○	60H
INNER1 ○○	86H
INNERu ○○	D0H
EJ_WAIT ○○	78H

Control setting

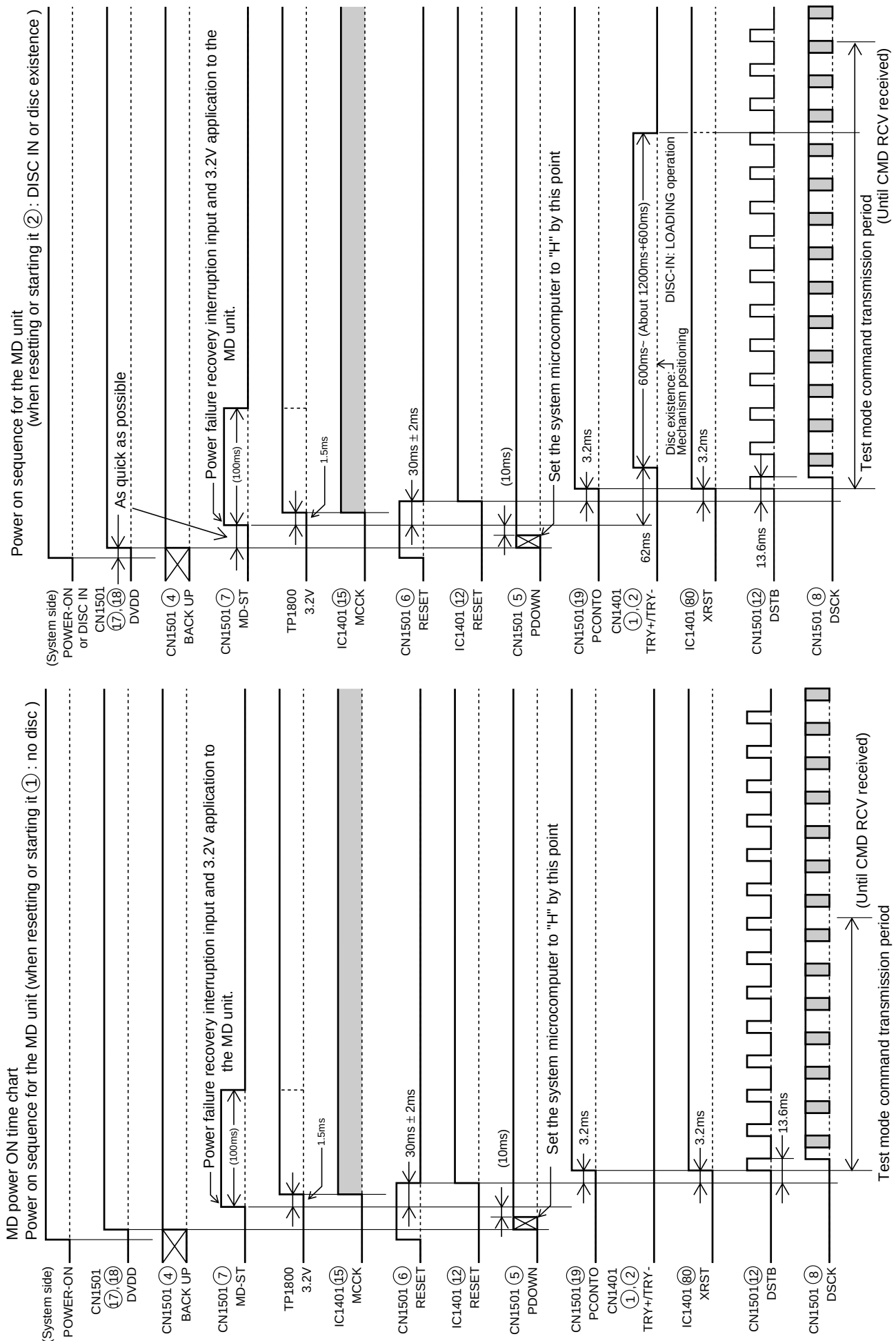
Item indication	Setting
CONTRL1 ○○	08H
CONTRL2 ○○	02H
ADJTTM ○○	14H
HDEQAD ○○	92H
LDEQAD ○○	8EH
GDEQAD ○○	91H
GDEQAD2 ○○	91H
MDEQBC ○○	8CH
LDEQBC ○○	8FH
GDEQBC ○○	8AH
GDEQBC2 ○○	8AH
HALSG ○○	11H
LALSG ○○	11H
GALSG ○○	11H
HALSOFS ○○	FFH
LALSOFS ○○	00H
GALSOFS ○○	00H
AJST ○○	00H

ADJUST setting

Item indication	Setting
COK ○○	58H
FAT ○○	C0H
TAT ○○	3EH
CAT ○○	40H
FAB ○○	64H
STR ○○	0BH
SFS ○○	0DH
STC ○○	0DH

REC bit setting

Item indication	Setting
SP_WR50 ○○	C0H
SP_WR56 ○○	FEH
SP_WR44 ○○	00H
SP_WR53 ○○	16H
LP2 WR50 ○○	80H
LP2 WR56 ○○	20H
LP2 WR44 ○○	80H
LP2 WR53 ○○	00H
LP4 WR50 ○○	BFH
LP4 WR56 ○○	02H
LP4 WR44 ○○	80H
LP4 WR53 ○○	00H
RVD ○○	00H


MD power ON time chart
Power on sequence for the MD unit (when resetting or starting it ① : no disc)
(System side) POWER-ON
CN1501 ⑰,⑱ DVDD
CN1501 ④ BACK UP
CN1501 ⑦ MD-ST
TP1800 3.2V
IC1401 ⑮ MCCK
CN1501 ⑥ RESET
IC1401 ⑫ RESET
CN1501 ⑤ PDOWN
CN1501 ⑲ PCONTO
CN1401 ①,② TRY+/TRY-
IC1401 ⑳ XRST
CN1501 ⑫ DSTB
CN1501 ⑧ DSCK
Power failure recovery interruption input and 3.2V application to the MD unit.
(100ms)
1.5ms
30ms ± 2ms
(10ms)
Set the system microcomputer to "H" by this point
3.2ms
13.6ms
Test mode command transmission period
(Until CMD RCV received)
Power on sequence for the MD unit
(when resetting or starting it ② : DISC IN or disc existence)
(System side) POWER-ON
CN1501 ⑰,⑱ DVDD
CN1501 ④ BACK UP
CN1501 ⑦ MD-ST
TP1800 3.2V
IC1401 ⑮ MCCK
CN1501 ⑥ RESET
IC1401 ⑫ RESET
CN1501 ⑤ PDOWN
CN1501 ⑲ PCONTO
CN1401 ①,② TRY+/TRY-
IC1401 ⑳ XRST
CN1501 ⑫ DSTB
CN1501 ⑧ DSCK
As quick as possible
Power failure recovery interruption input and 3.2V application to the MD unit.
(100ms)
1.5ms
30ms ± 2ms
(10ms)
Set the system microcomputer to "H" by this point
3.2ms
62ms
600ms~ (About 1200ms+600ms)
Disc existence: ↓
Mechanism positioning
DISC-IN: LOADING operation
3.2ms
13.6ms
Test mode command transmission period
(Until CMD RCV received)

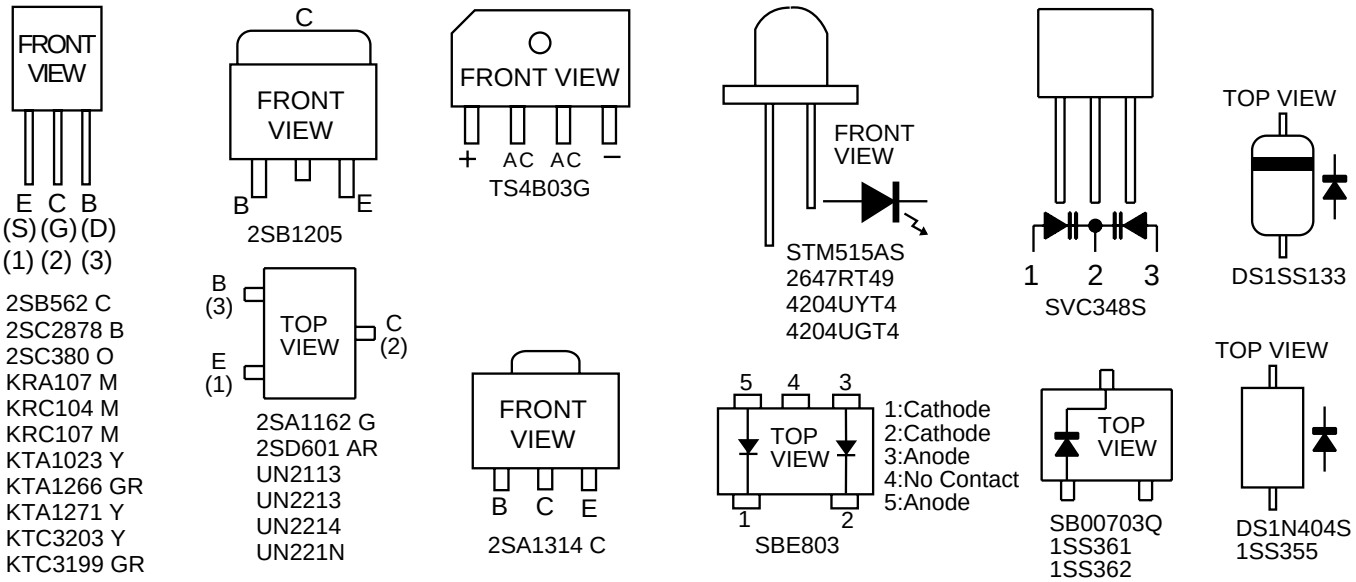
NOTES ON SCHEMATIC DIAGRAM

- Resistor:
  To differentiate the units of resistors, such symbol as K and M are used: the symbol K means 1000 ohm and the symbol M means 1000 kohm and the resistor without any symbol is ohm-type resistor. Besides, the one with “Fusible” is a fuse type.
- Capacitor:
  To indicate the unit of capacitor, a symbol P is used: this symbol P means pico-farad and the unit of the capacitor without such a symbol is microfarad. As to electrolytic capacitor, the expression “capacitance/withstand voltage” is used.
  (CH), (TH), (RH), (UJ): Temperature compensation
  (ML): Mylar type
  (P.P.): Polypropylene type
- Schematic diagram and Wiring Side of P.W.Board for this model are subject to change for improvement without prior notice.
- The indicated voltage in each section is the one measured by Digital Multimeter between such a section and the chassis with no signal given.
  1. In the tuner section,
     ( ) indicates AM
     < > indicates FM stereo
  2.In the CD section, the CD is stopped.
- Parts marked with “ ⚠ ” (⊏ ═ ═ ═ ⊐) are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

REF. NO	DESCRIPTION	POSITION
NSW802	PICKUP IN	ON—OFF
SW01	CD LID CLOSE	ON—OFF
SW02	CD LID OPEN	ON—OFF
SW1930	WRITE PRO	ON—OFF
SW1931	DISC MEDIA	ON—OFF
SW1932	LOADING	ON—OFF
SW1933	RECORD	ON—OFF
SW1934	PLAY	ON—OFF
SW1936	LEAD IN	ON—OFF
SWD02	ON/STAND-BY	ON—OFF
SWD03	MD EJECT	ON—OFF
SWD04	ERASE	ON—OFF
SWD07	CD EJECT	ON—OFF
SWD09	VOLUM UP	ON—OFF

REF. NO	DESCRIPTION	POSITION
SWD10	VOLUME DOWN	ON—OFF
SWD11	SKIP UP	ON—OFF
SWD12	CD PLAY	ON—OFF
SWD13	CD STOP	ON—OFF
SWD14	SKIP DOWN	ON—OFF
SWD15	MD PLAY	ON—OFF
SWD16	MD STOP	ON—OFF
SWD17	PLAY MODE	ON—OFF
SWD18	RECORD MODE	ON—OFF
SWD19	MD RECORD	ON—OFF
SWD20	AUX/DEMO	ON—OFF
SWD21	TUNER(BAND)	ON—OFF
SWD22	+10	ON—OFF

TYPES OF TRANSISTOR AND LED



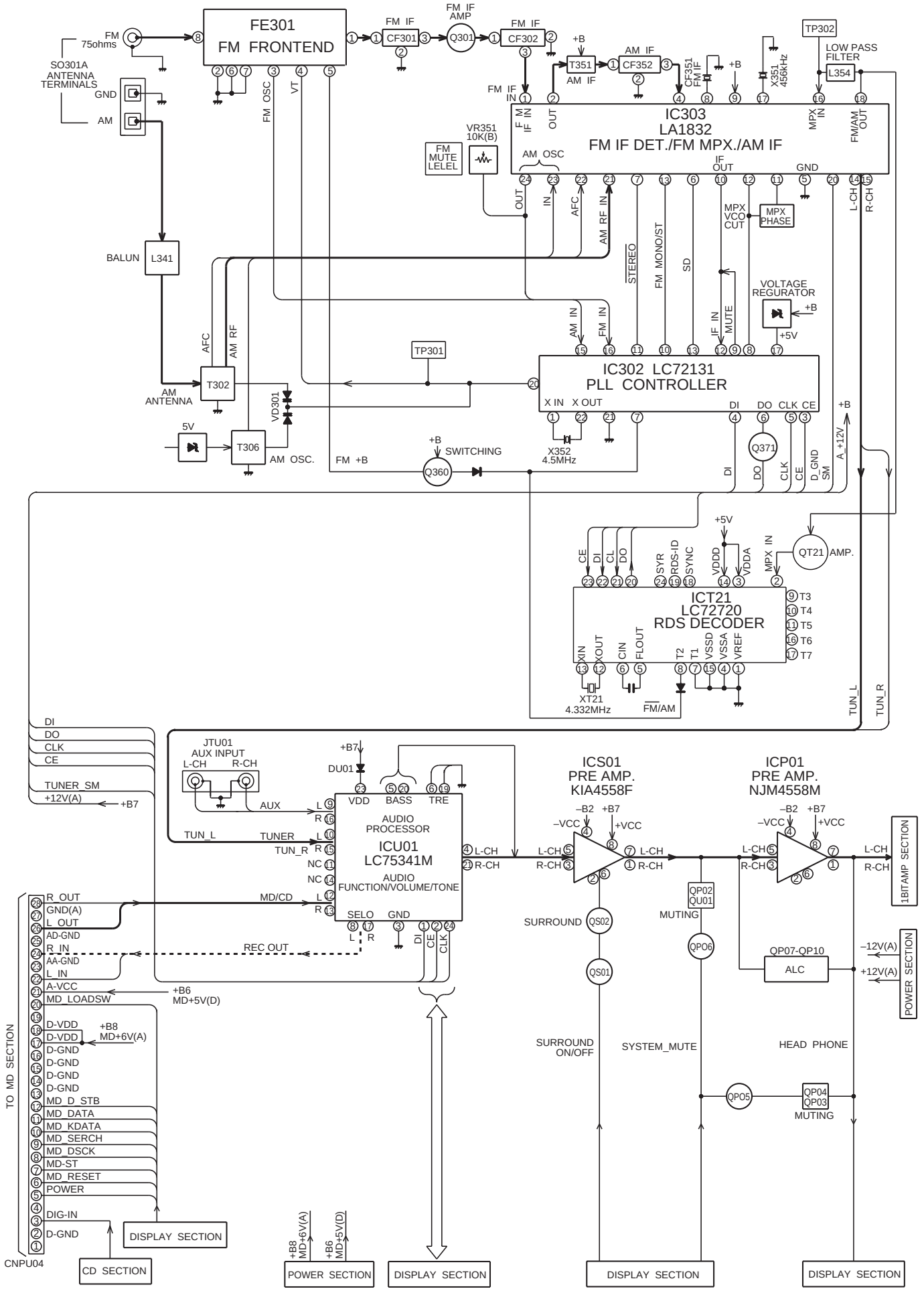


Figure 38 BLOCK DIAGRAM (1/4)

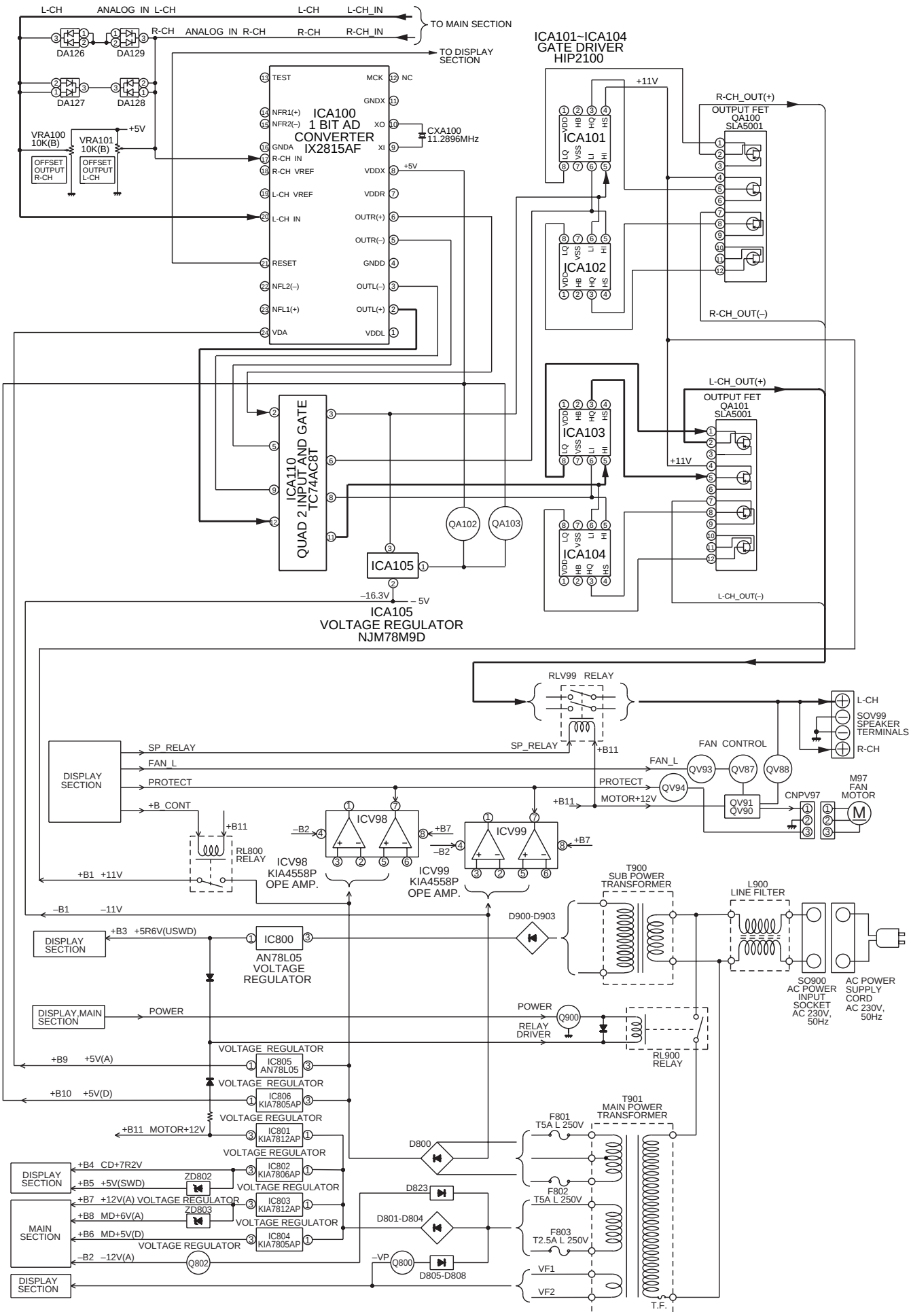


Figure 39 BLOCK DIAGRAM (2/4)

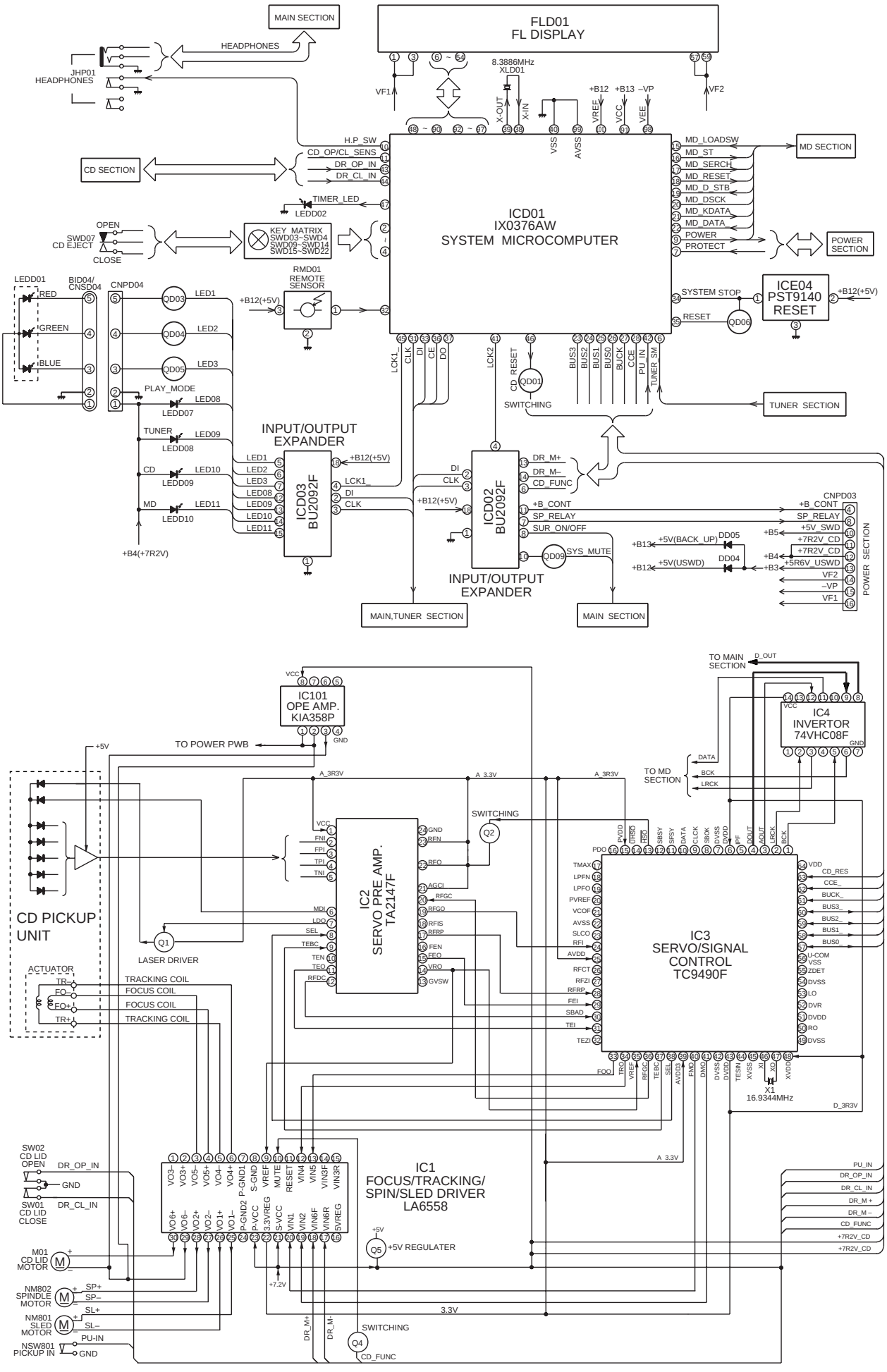


Figure 40 BLOCK DIAGRAM (3/4)

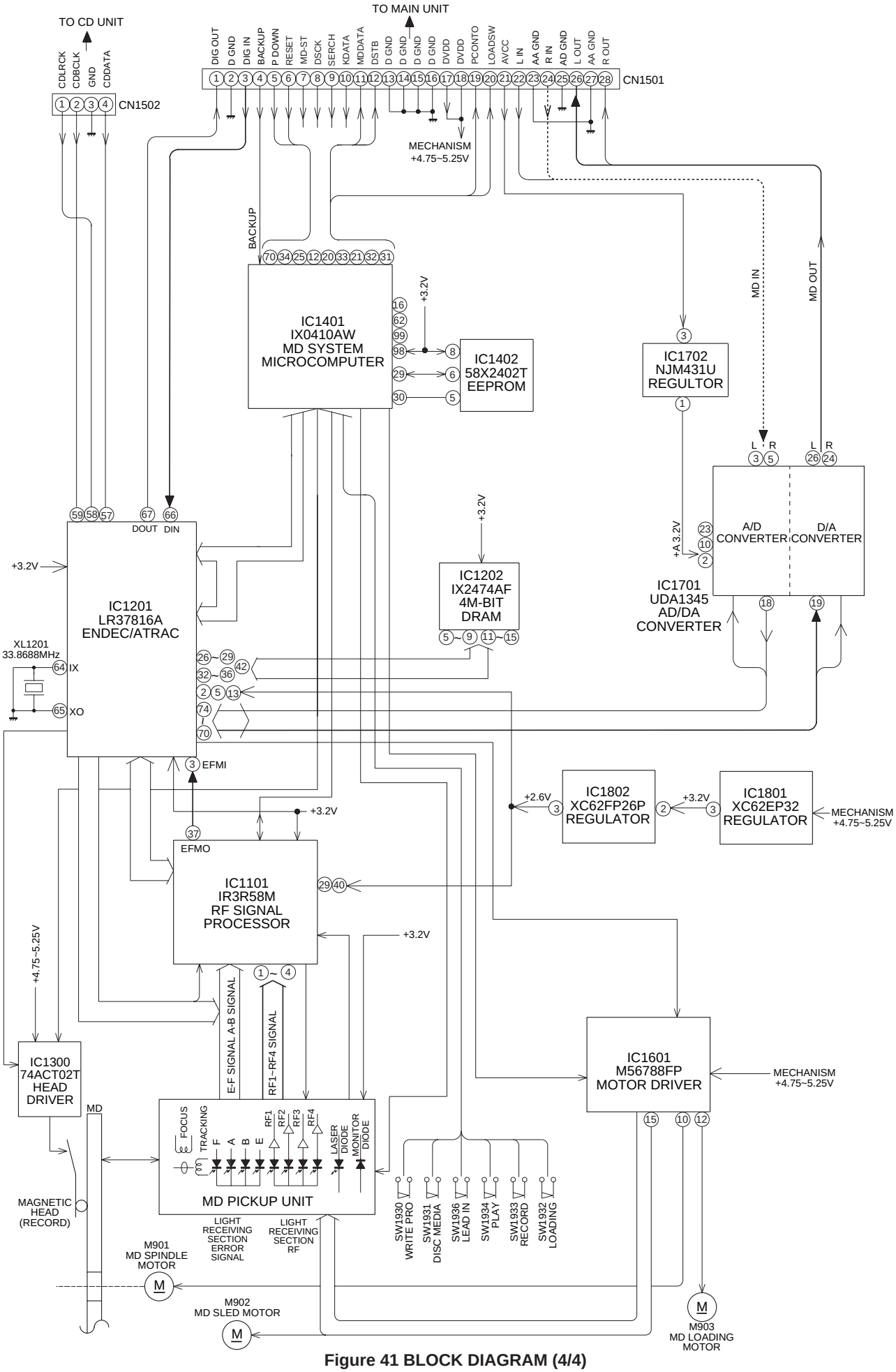


Figure 41 BLOCK DIAGRAM (4/4)

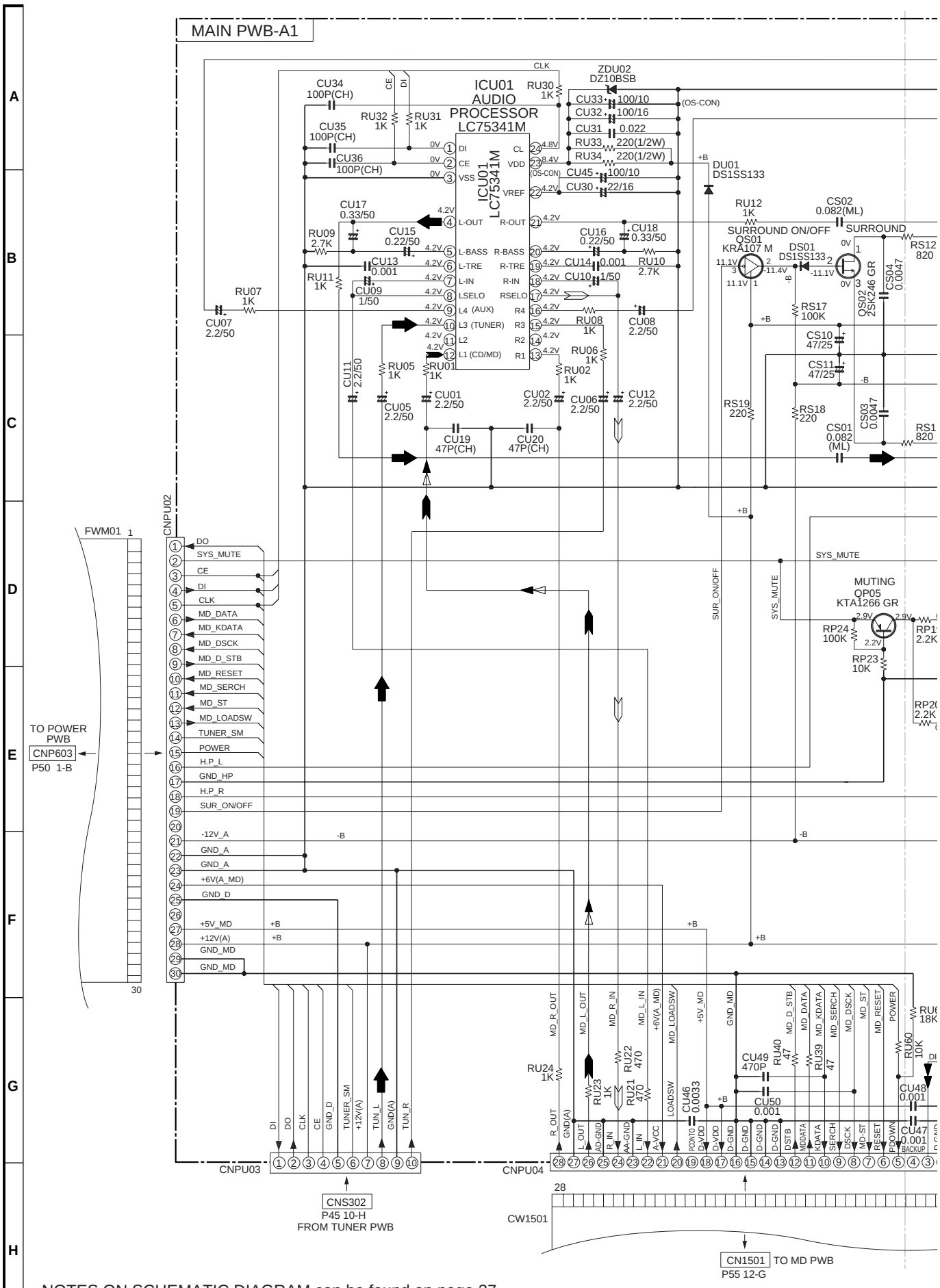
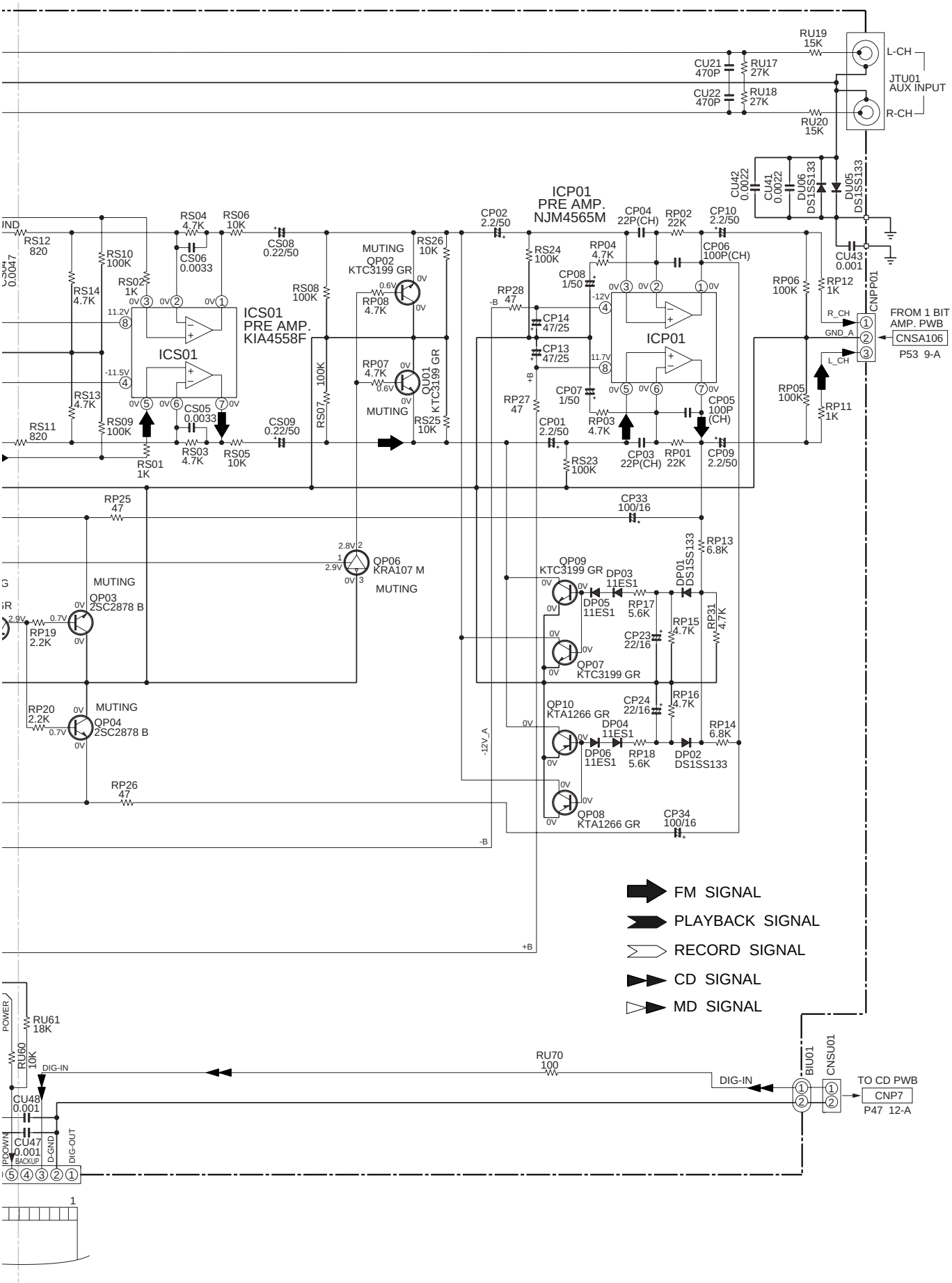
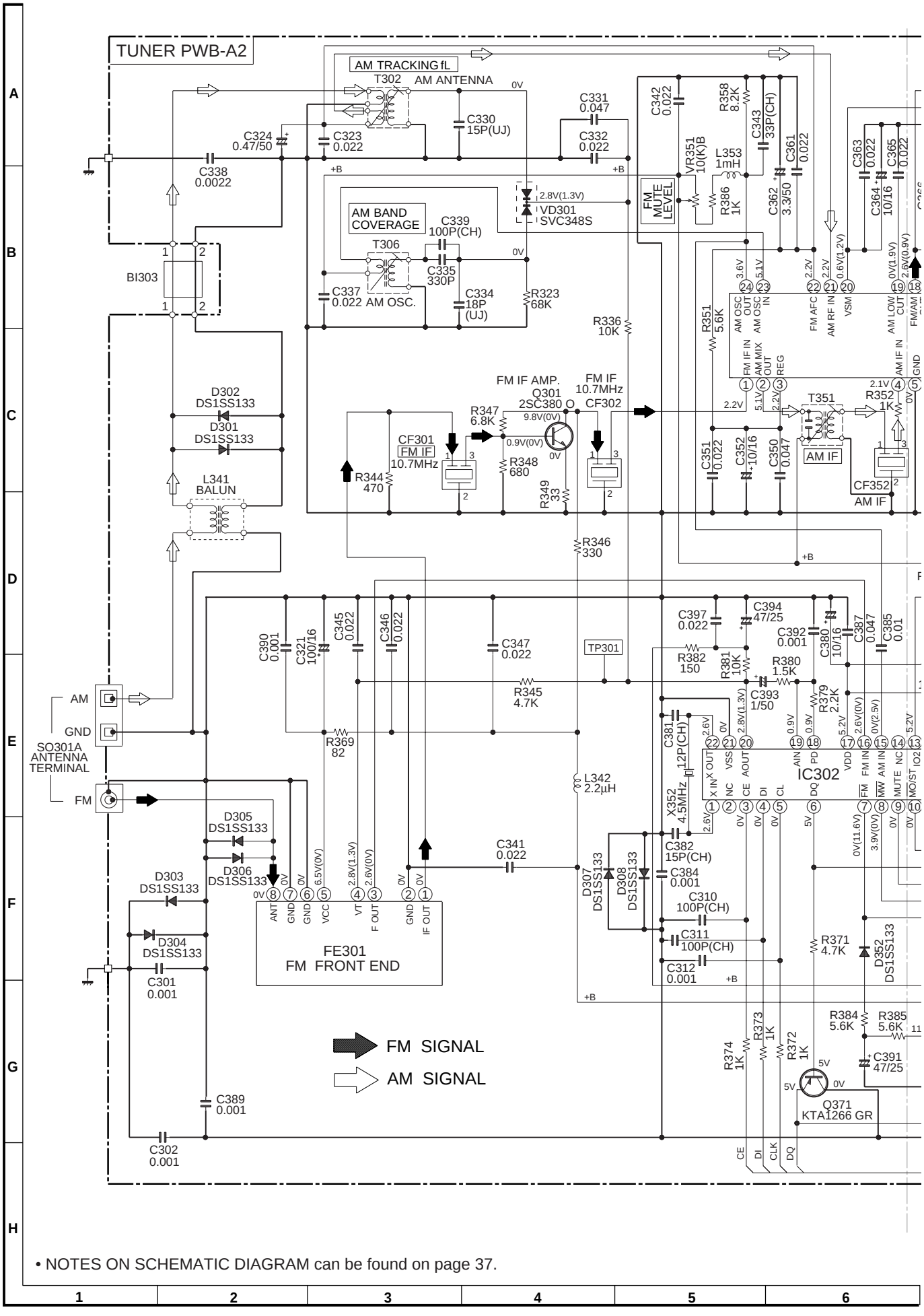


Figure 42 SCHEMATIC DIAGRAM (1/14)



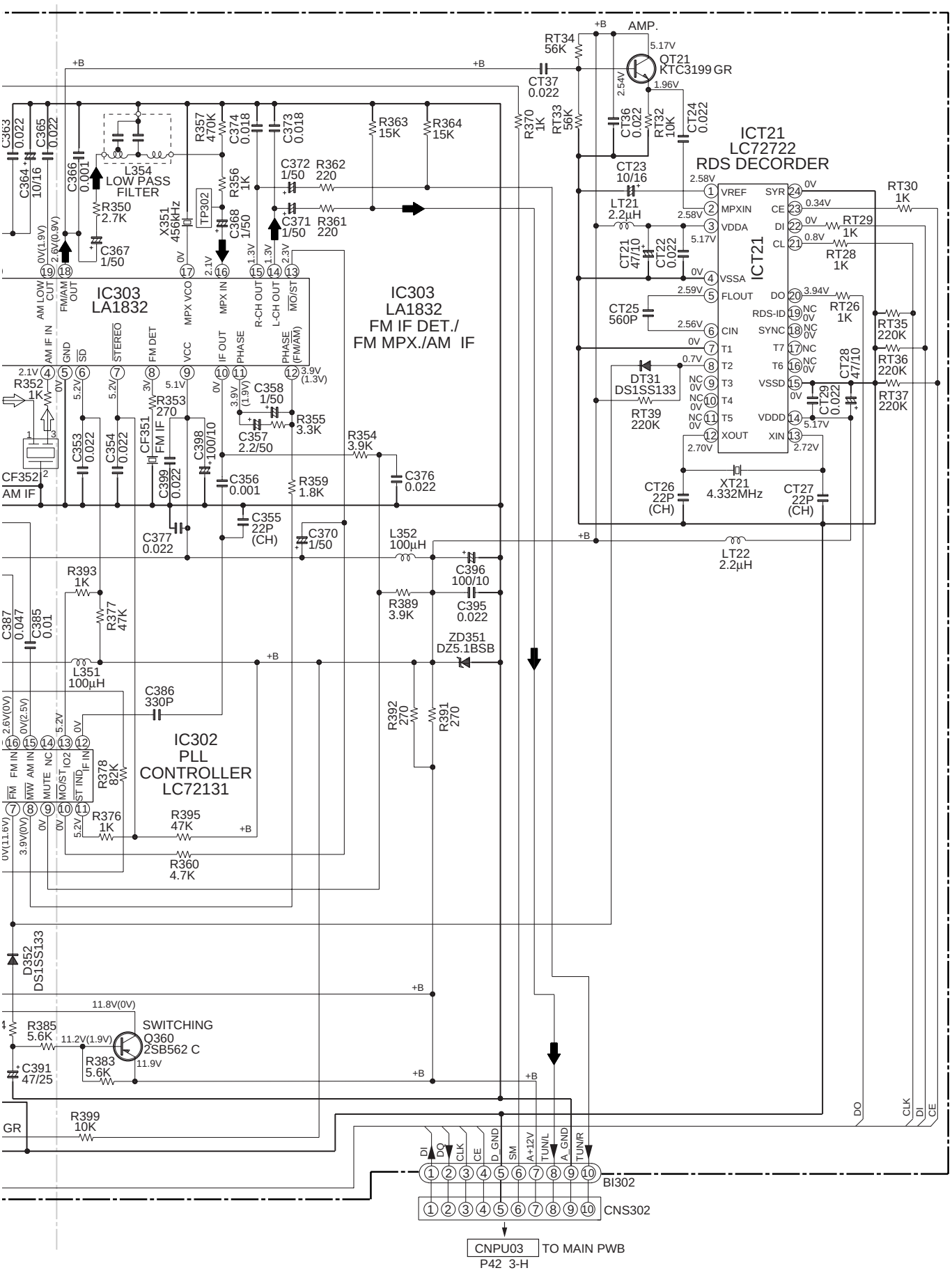
7	8	9	10	11	12

Figure 43 SCHEMATIC DIAGRAM (2/14)



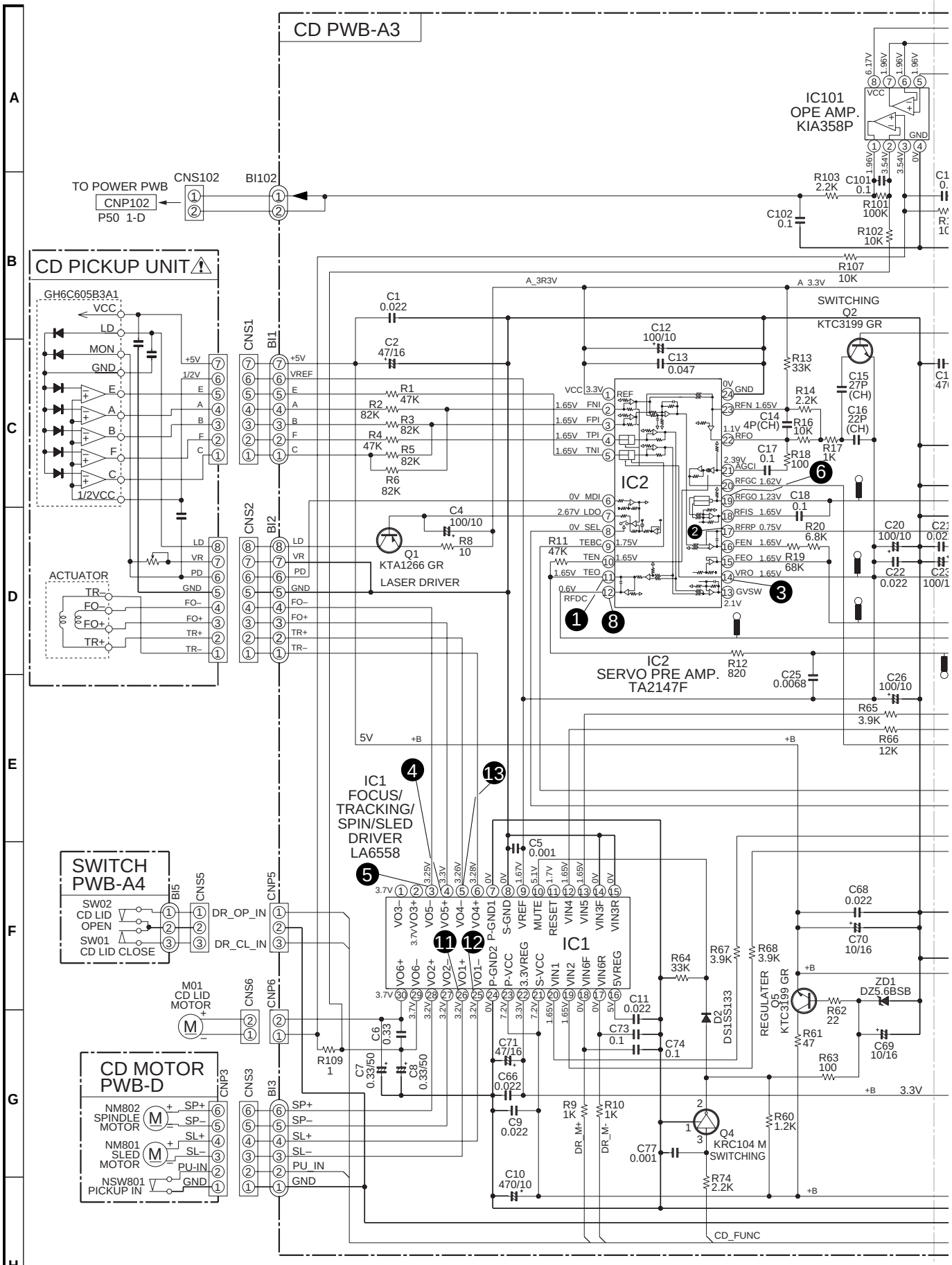
• NOTES ON SCHEMATIC DIAGRAM can be found on page 37.

Figure 44 SCHEMATIC DIAGRAM (3/14)



7	8	9	10	11	12

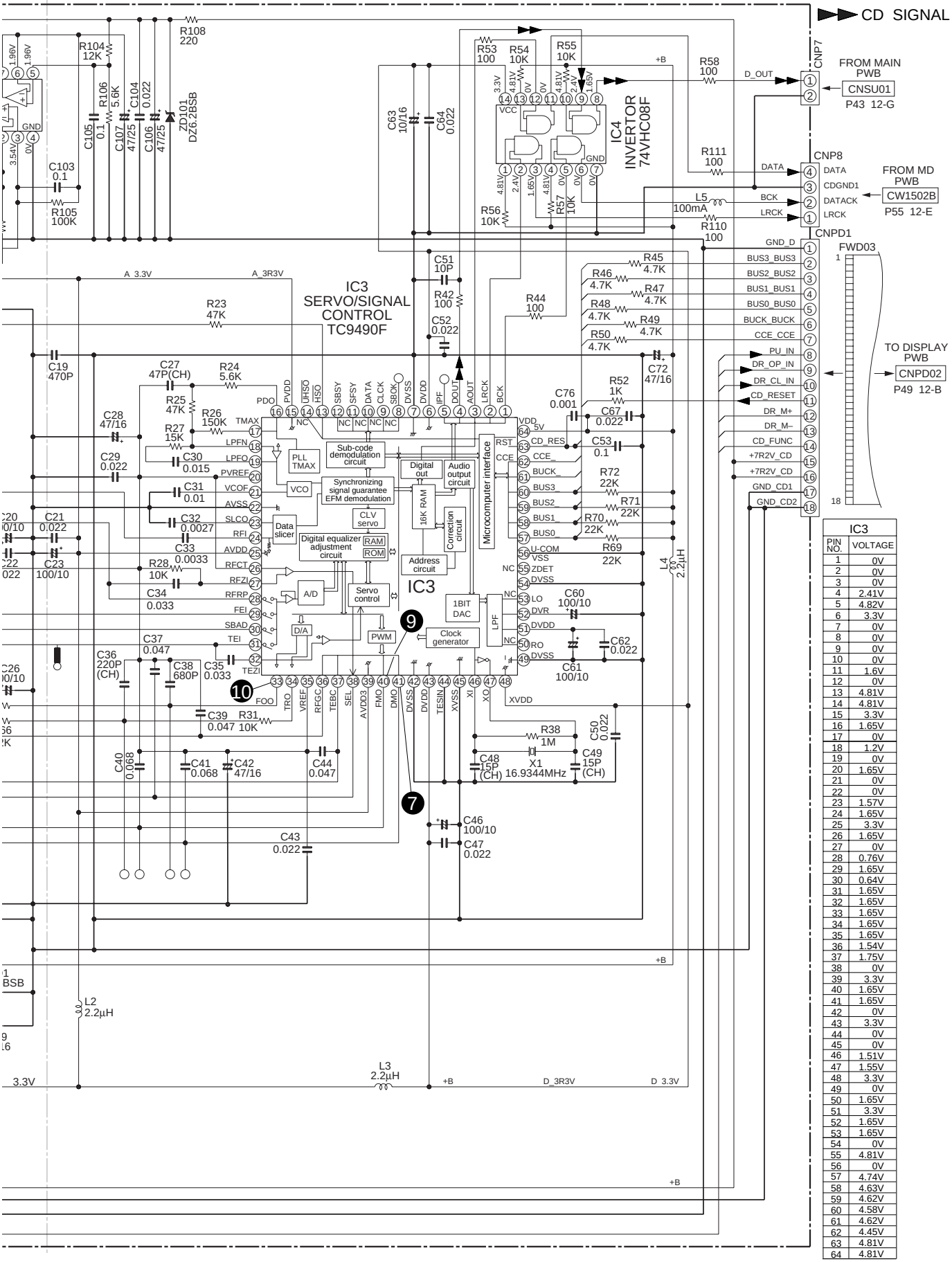
Figure 45 SCHEMATIC DIAGRAM (4/14)



• The numbers 1 to 17 are waveform numbers shown in page 72-73.

• NOTES ON SCHEMATIC DIAGRAM can be found on page 37.

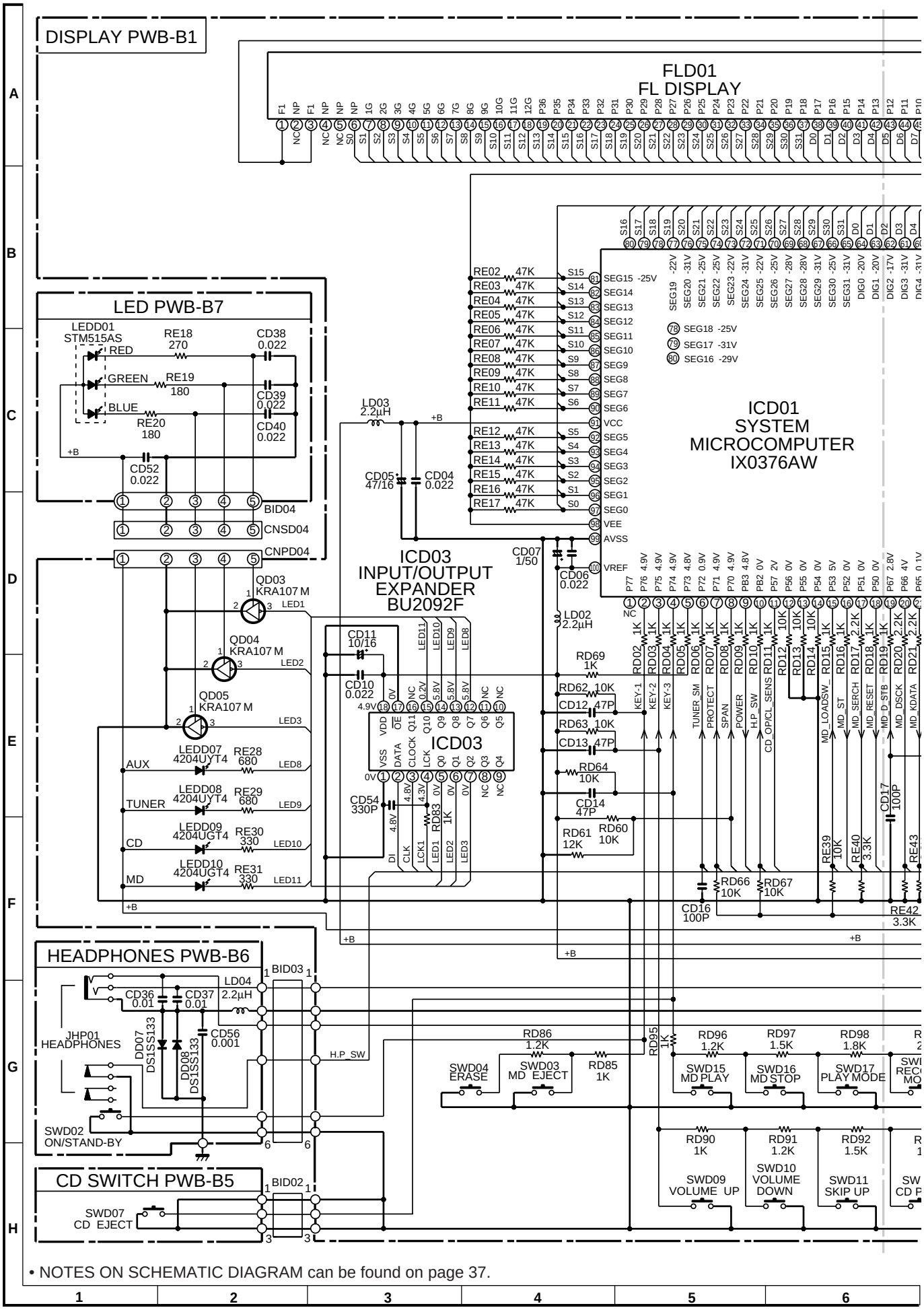
Figure 46 SCHEMATIC DIAGRAM (5/16)



IC3	
PIN NO.	VOLTAGE
1	0V
2	0V
3	0V
4	2.41V
5	4.82V
6	3.3V
7	0V
8	0V
9	0V
10	0V
11	1.6V
12	0V
13	4.81V
14	4.81V
15	3.3V
16	1.65V
17	0V
18	1.2V
19	0V
20	1.65V
21	0V
22	0V
23	1.57V
24	1.65V
25	3.3V
26	1.65V
27	0V
28	0.76V
29	1.65V
30	0.64V
31	1.65V
32	1.65V
33	1.65V
34	1.65V
35	1.65V
36	1.54V
37	1.75V
38	0V
39	3.3V
40	1.65V
41	1.65V
42	0V
43	3.3V
44	0V
45	0V
46	1.51V
47	1.55V
48	3.3V
49	0V
50	1.65V
51	3.3V
52	1.65V
53	1.65V
54	0V
55	4.81V
56	0V
57	4.74V
58	4.63V
59	4.62V
60	4.58V
61	4.62V
62	4.45V
63	4.81V
64	4.81V

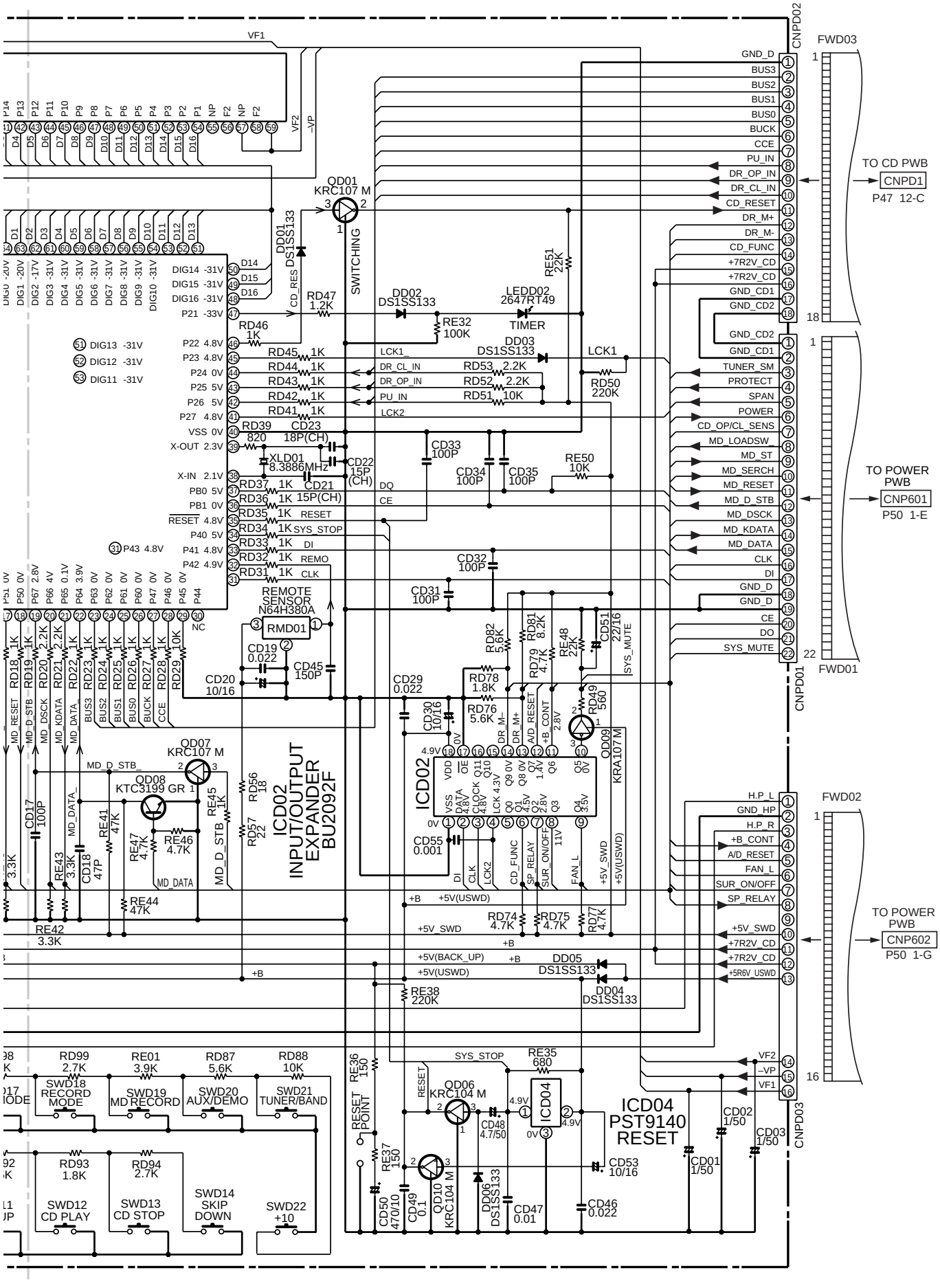
7	8	9	10	11	12

Figure 47 SCHEMATIC DIAGRAM (6/14)



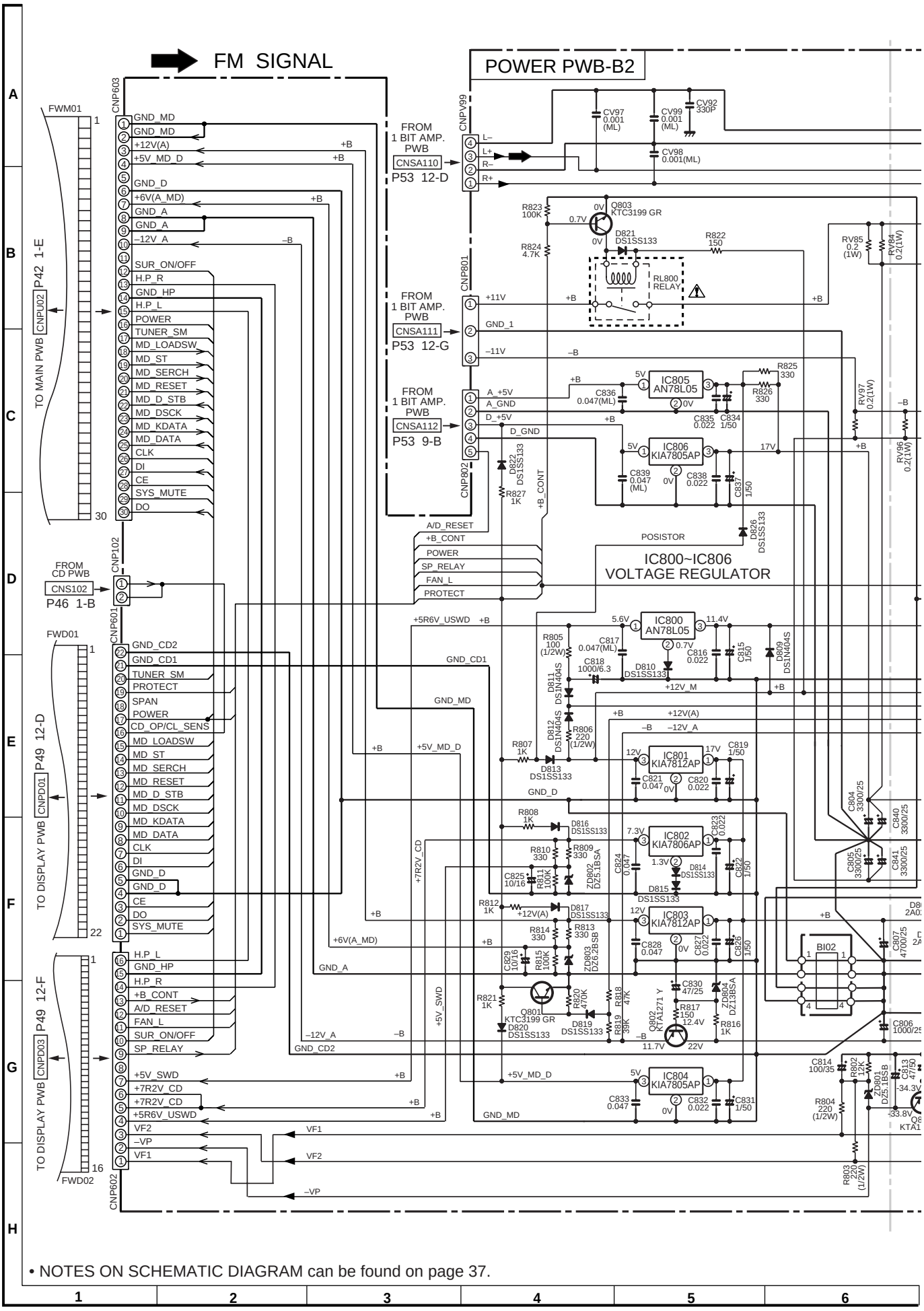
• NOTES ON SCHEMATIC DIAGRAM can be found on page 37.

Figure 48 SCHEMATIC DIAGRAM (7/14)



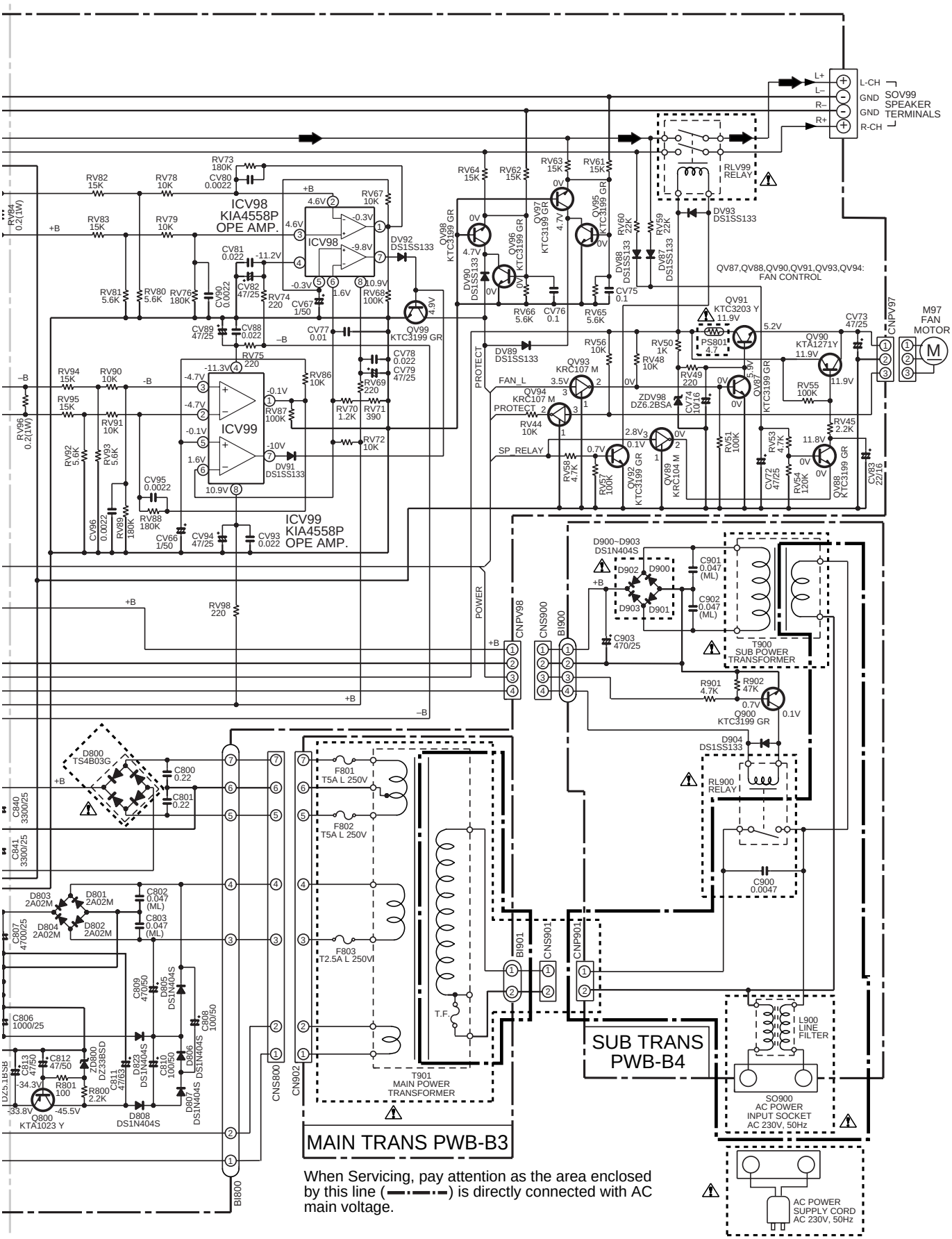
7	8	9	10	11	12

Figure 49 SCHEMATIC DIAGRAM (8/14)



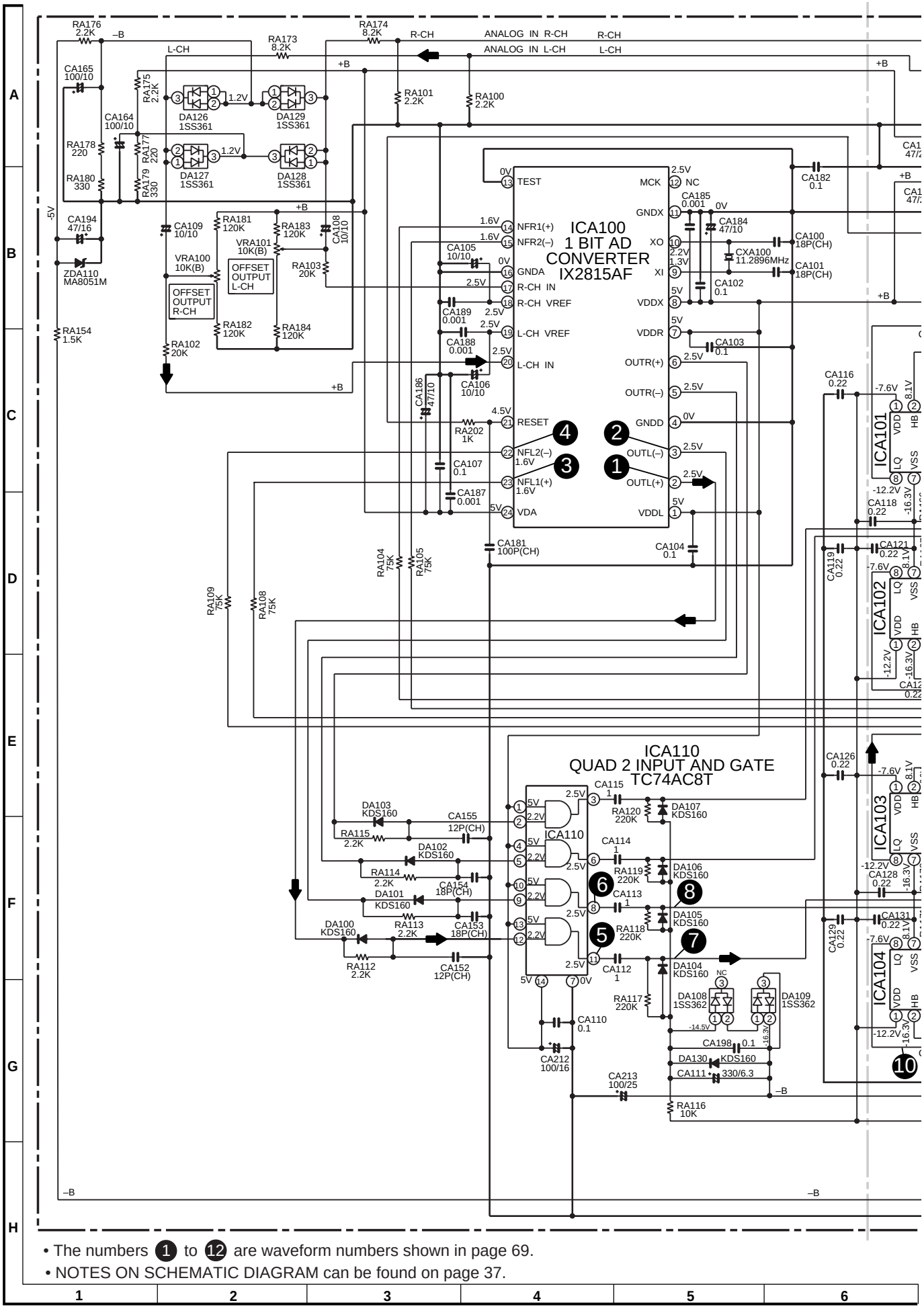
• NOTES ON SCHEMATIC DIAGRAM can be found on page 37.

Figure 50 SCHEMATIC DIAGRAM (9/14)



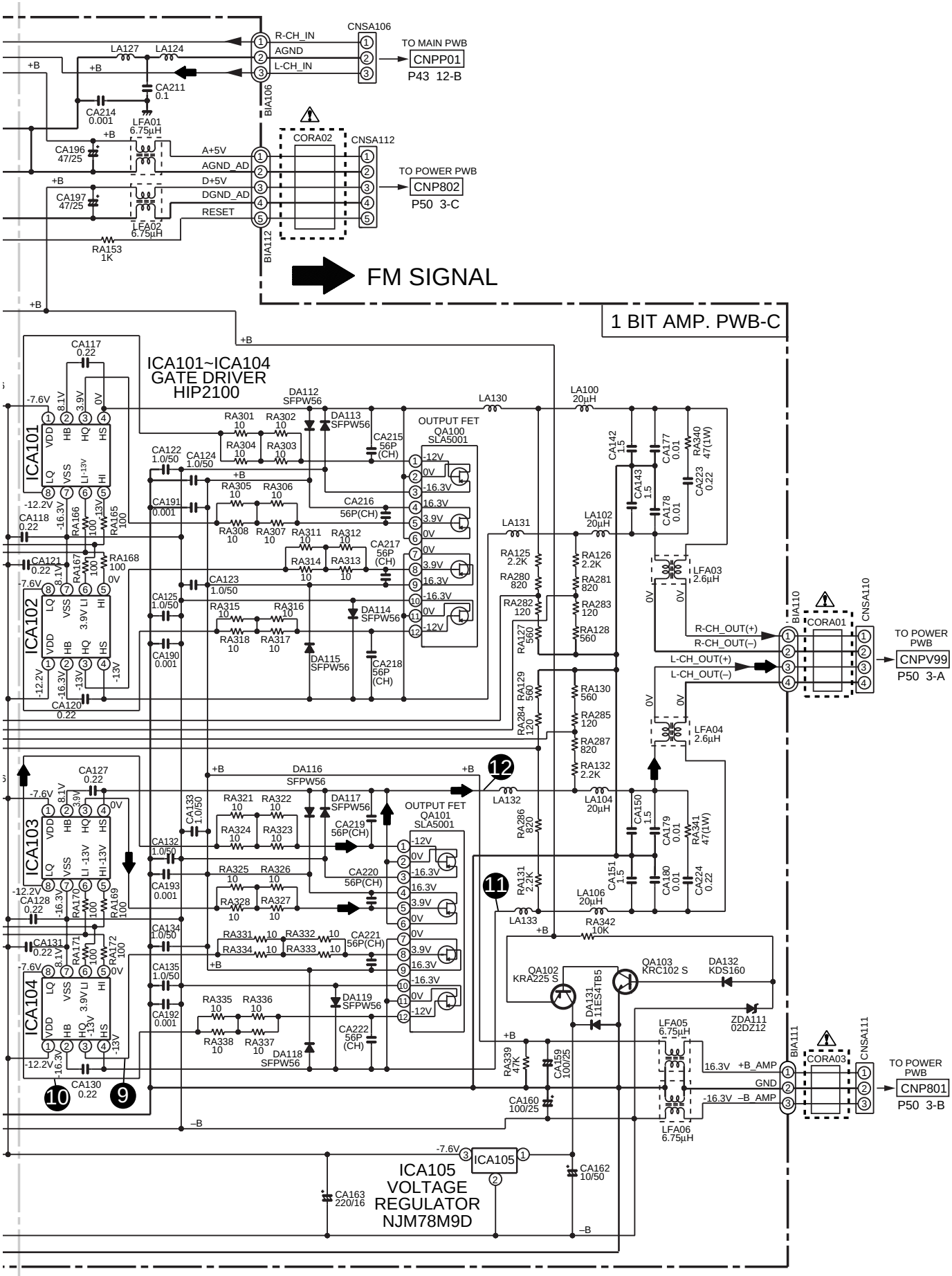
7	8	9	10	11	12

Figure 51 SCHEMATIC DIAGRAM (10/14)



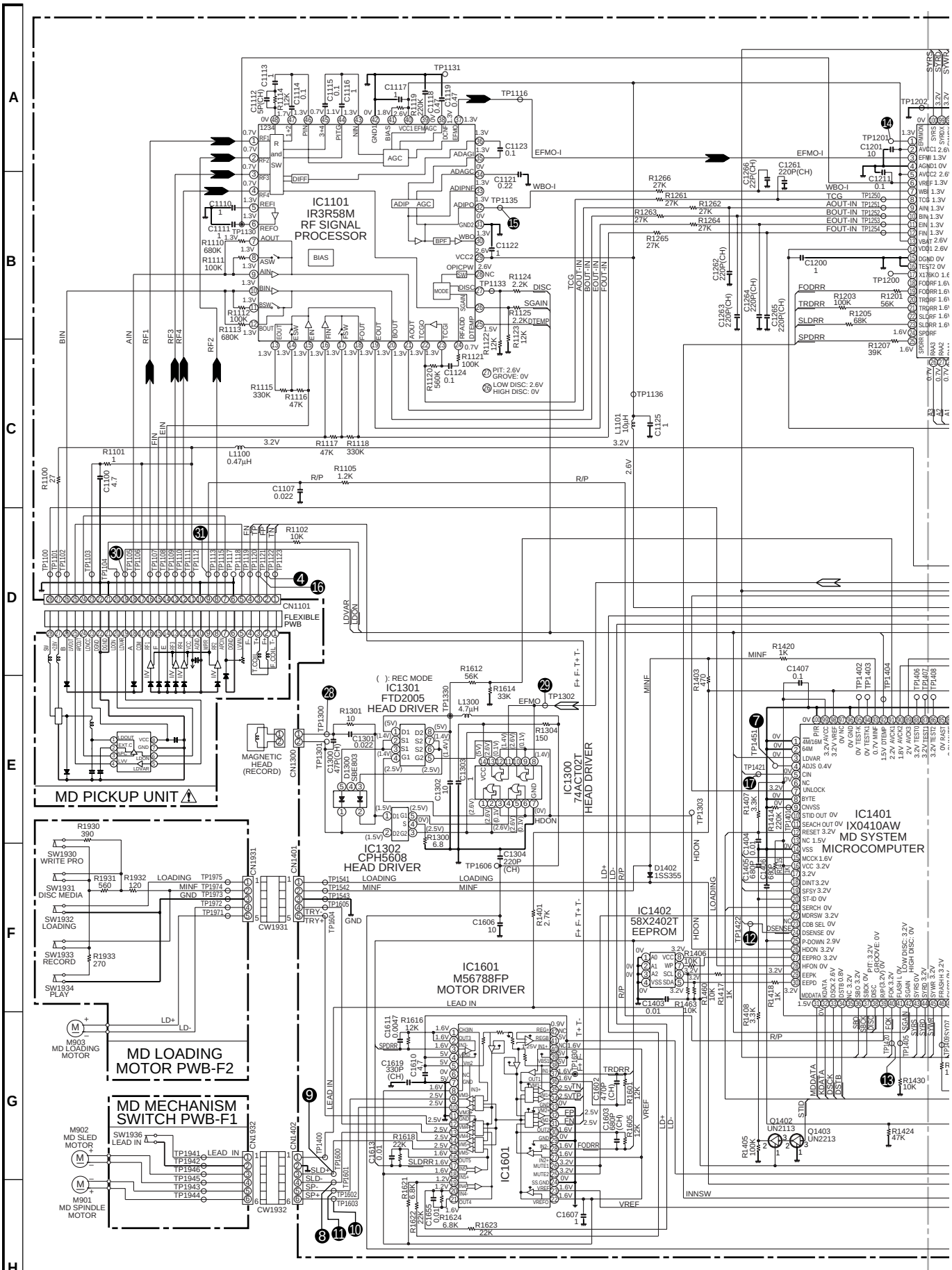
• The numbers 1 to 12 are waveform numbers shown in page 69.
• NOTES ON SCHEMATIC DIAGRAM can be found on page 37.

Figure 52 SCHEMATIC DIAGRAM (11/14)



7	8	9	10	11	12

Figure 53 SCHEMATIC DIAGRAM (12/14)


IC1101
IR3R58M
RF SIGNAL
PROCESSOR
IC1301
FTD2005
HEAD DRIVER
IC1300
74ACT02T
HEAD DRIVER
IC1302
CPH5608
HEAD DRIVER
IC1401
IX0410AW
MD SYSTEM
MICROCOMPUTER
IC1402
58X2402T
EEPROM
IC1601
M56788FP
MOTOR DRIVER
MD PICKUP UNIT
MD LOADING
MOTOR PWB-F2
MD MECHANISM
SWITCH PWB-F1
CN1101
FLEXIBLE
PWB
MAGNETIC
HEAD
(RECORD)
M903
MD LOADING
MOTOR
M902
MD SLED
MOTOR
M901
MD SPINDLE
MOTOR
SW1930
WRITE PRO
SW1931
DISC MEDIA
SW1932
LOADING
SW1933
RECORD
SW1934
PLAY
SW1936
LEAD IN
CW1931
CW1932
CN1931
CN1401
CN1932
CN1402
CN1300
( ): REC MODE
AGC
ADAGC
ADIP
BPF
WBO
BIAS
DIFF
EFMO-I
WBO-I
TRDRR
FODRR
SLDRR
SPDRR
SGAIN
DTEMP
HDON
LOADING
MINF
LEAD IN
VREF
INNSW
R/P
LD+
LD-
TRY+
TRY-
SLD+
SLD-
SP+
SP-
FIN
RFIN
TIN
TFIN
F+ F- T+ T-
LDVAR
LDON
MDDATA
XRST
SCOR
SBSY
SCLK
SQSY
SCOR
FLAG
SSTP
SUBQ
SWDT
SCKT
SQSO
MNT0
MNT1
MNT2
MNT3
XTAI
XTAO
RESET
SENSE
DSENSE
P-DOWN
MCCK 1.6V
VCC 3.2V
DINT 3.2V
SFSY 3.2V
ST-ID 0V
SERCH 0V
MDRSW 3.2V
CDB SEL 0V
DSENSE 0V
P-DOWN 2.9V
HDON 3.2V
EEPRO 3.2V
HFON 0V
EEPK
EEPD
MDDATA
XRST 3.2V
SCOR
SBSY 0V
SCLK 3.2V
DISC
R/P(3.2V)
FOK 3.2V
DSCK 2.6V
DSTB 0.8V
SQSY 3.2V
SWDT 3.2V
SCKT 3.2V
SQSO
MNT0 3.2V
MNT1 3.2V
MNT2 3.2V
MNT3 3.2V
XTAI
XTAO
RESET 3.2V
SENSE 0V
DSENSE
P-DOWN
HDON
EEPRO
HFON
EEPK
EEPD
MDDATA
STID
PITT 3.2V
GROVE: 0V
LOW DISC: 3.2V
HIGH DISC: 0V
FLAG 1.0V
SQSW 1.0V
SWDT 3.2V
SCKT 3.2V
SQSO 3.2V
SWIR 3.2V
FRASH H 3.2V
SYRS
SYRD
STWD
SPMON
SYRX
AVCC1 2.6V
EFMI 1.3V
AGND1 0V
AVCC2 2.6V
VREF 1.3V
WBI 1.3V
TCG 1.3V
AIN 1.3V
BIN 1.3V
EIN 1.3V
FIN 1.3V
VBAT 2.6V
VDD1 2.6V
DGND 0V
TEST2 0V
X1/16KO 1.6V
FODRR 1.6V
FODRR 1.6V
TRDRR 1.6V
TRDRR 1.6V
SLDRR 1.6V
SLDRR 1.6V
SPDRF
SPDRR
RAA3
RAA2
AOUT-IN
BOUT-IN
EOUT-IN
FOUT-IN
TP1131
TP1116
TP1135
TP1130
TP1133
TP1136
TP1202
TP1201
TP1200
TP1300
TP1301
TP1302
TP1303
TP1330
TP1421
TP1422
TP1451
TP1541
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TP1605
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TP1400
TP1600
TP1601
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TP1941
TP1942
TP1946
TP1945
TP1943
TP1944
TP1971
TP1972
TP1973
TP1974
TP1975
TP1804
D1402
1SS355
D1300
SBE803
Q1402
UN2113
Q1403
UN2213
L1100
0.47µH
L1300
4.7µH
L1101
10µH
R1101
R1102
R1105
R1107
R1117
R1118
R1120
R1121
R1122
R1123
R1124
R1125
R1126
R1127
R1128
R1129
R1130
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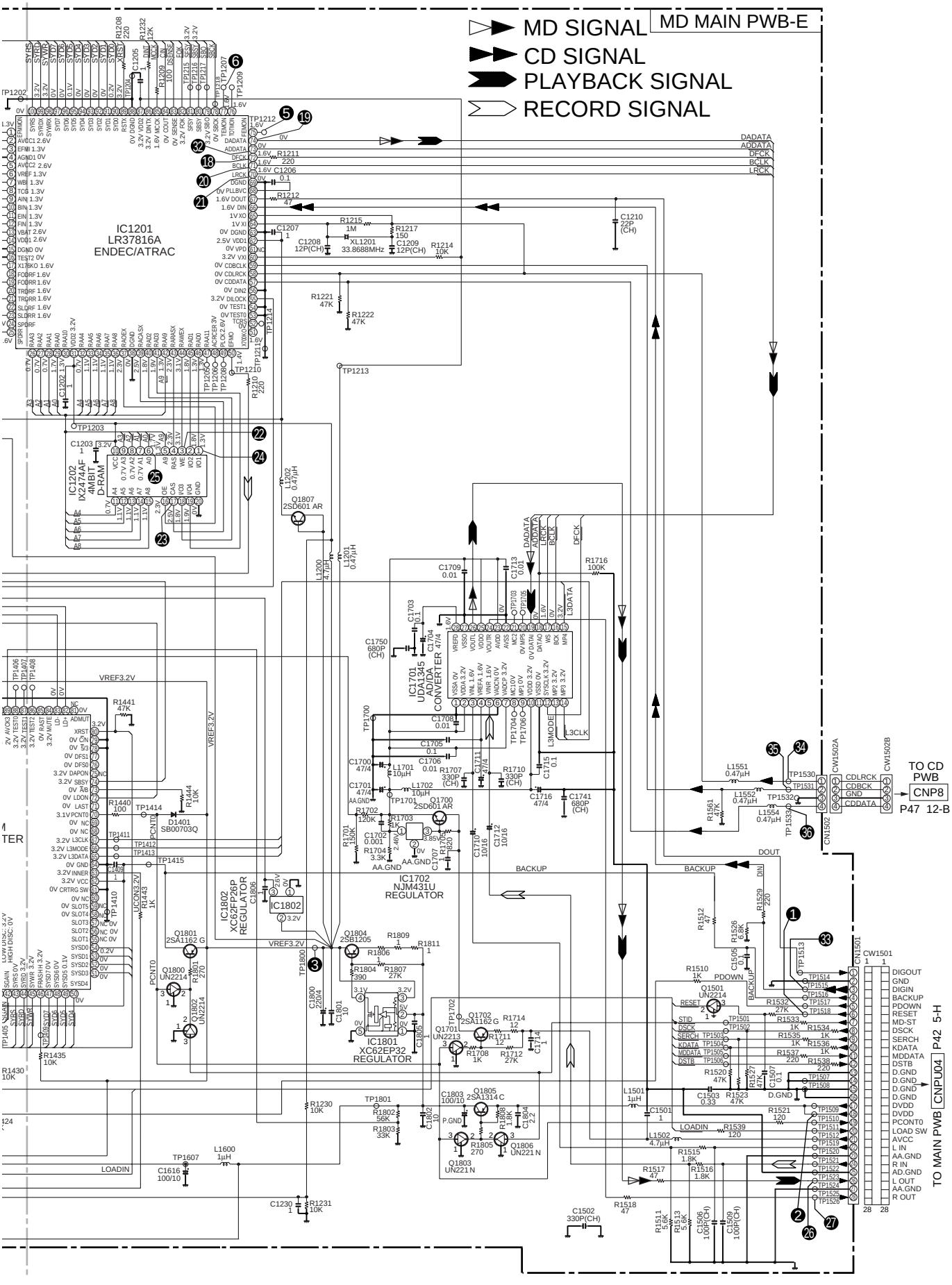
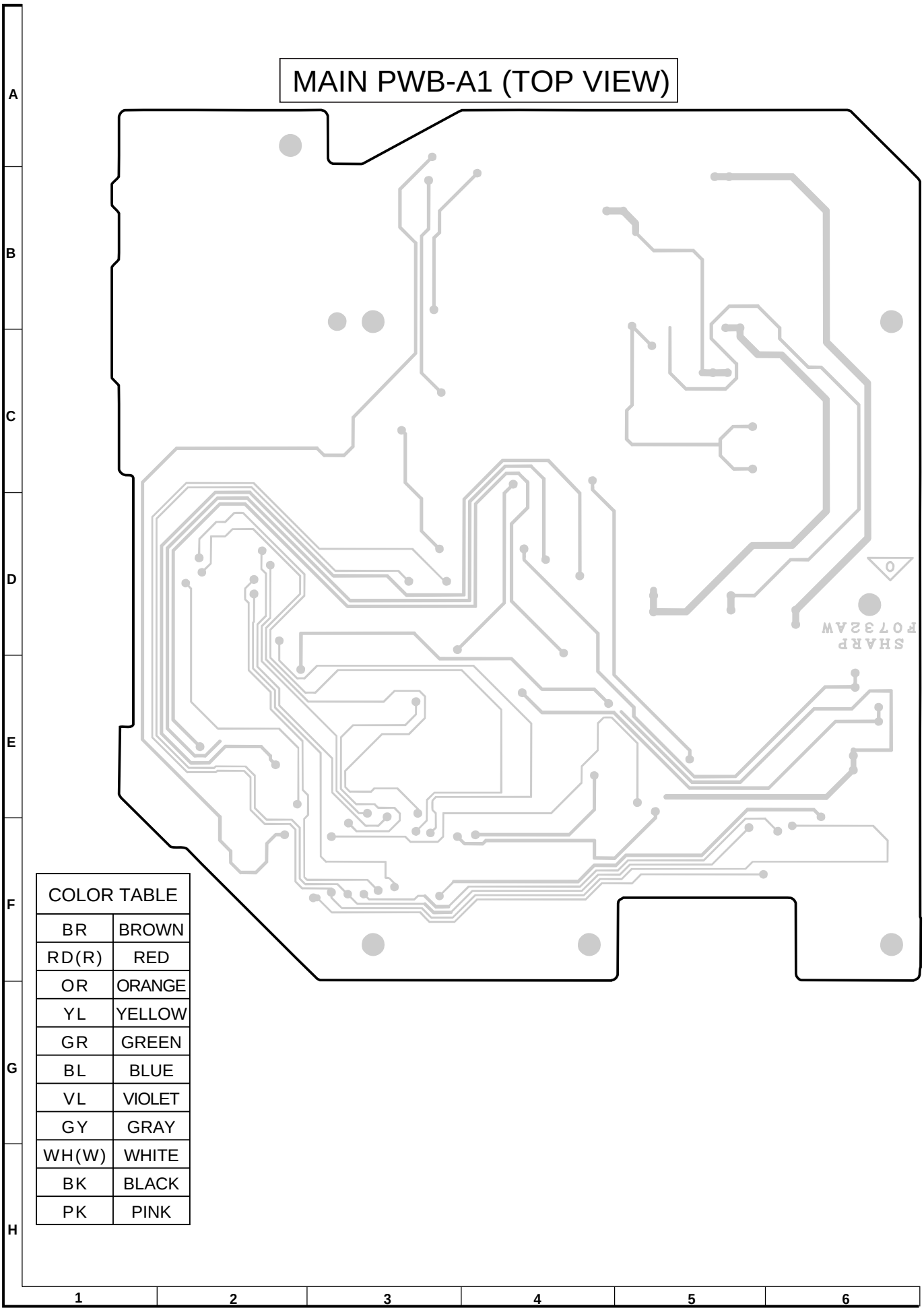
R1429
R1430
C1100
C1101
C1102
C1103
C1104
C1105
C1106
C1107
C1108
C1109
C1110
C1111
C1112
C1113
C1114
C1115
C1116
C1117
C1118
C1119
C1120
C1121
C1122
C1123
C1124
C1125
C1126
C1127
C1128
C1129
C1130
C1131
C1132
C1133
C1134
C1135
C1136
C1137
C1138
C1139



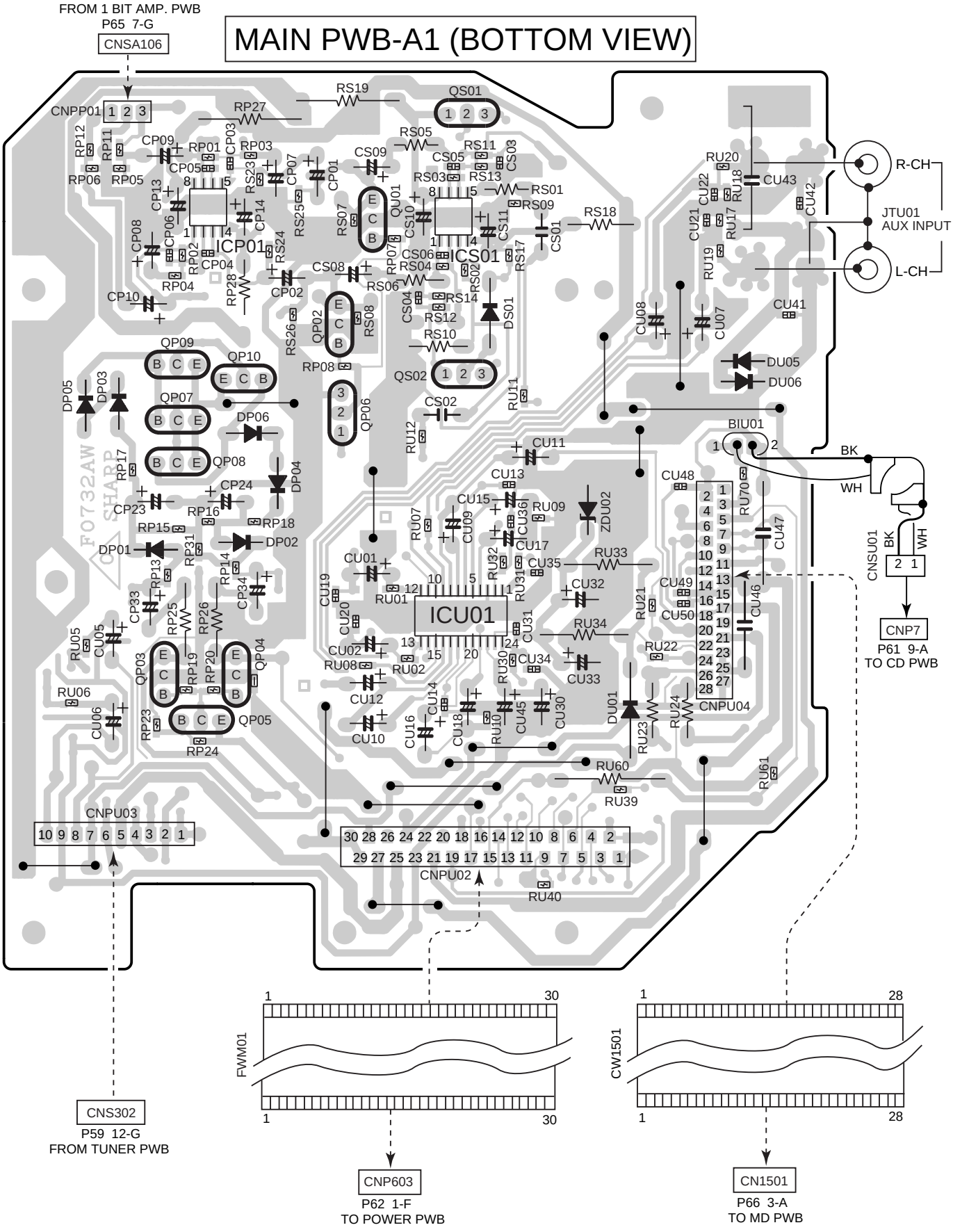
7	8	9	10	11	12

Figure 55 SCHEMATIC DIAGRAM (14/14)



COLOR TABLE	
BR	BROWN
RD(R)	RED
OR	ORANGE
YL	YELLOW
GR	GREEN
BL	BLUE
VL	VIOLET
GY	GRAY
WH(W)	WHITE
BK	BLACK
PK	PINK

Figure 56 WIRING SIDE OF P.W.BOARD (1/13)



7	8	9	10	11	12

Figure 57 WIRING SIDE OF P.W.BOARD (2/13)

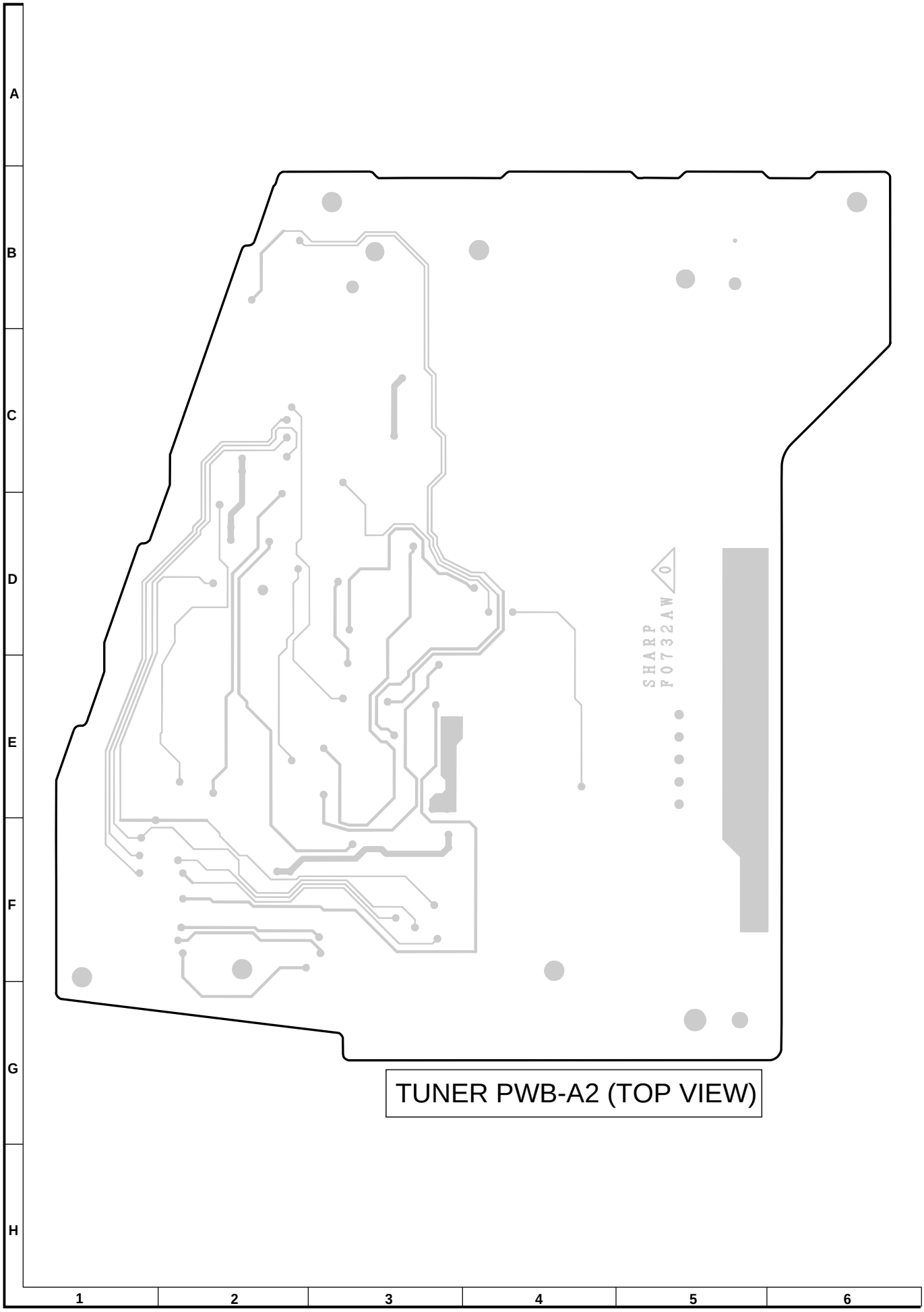
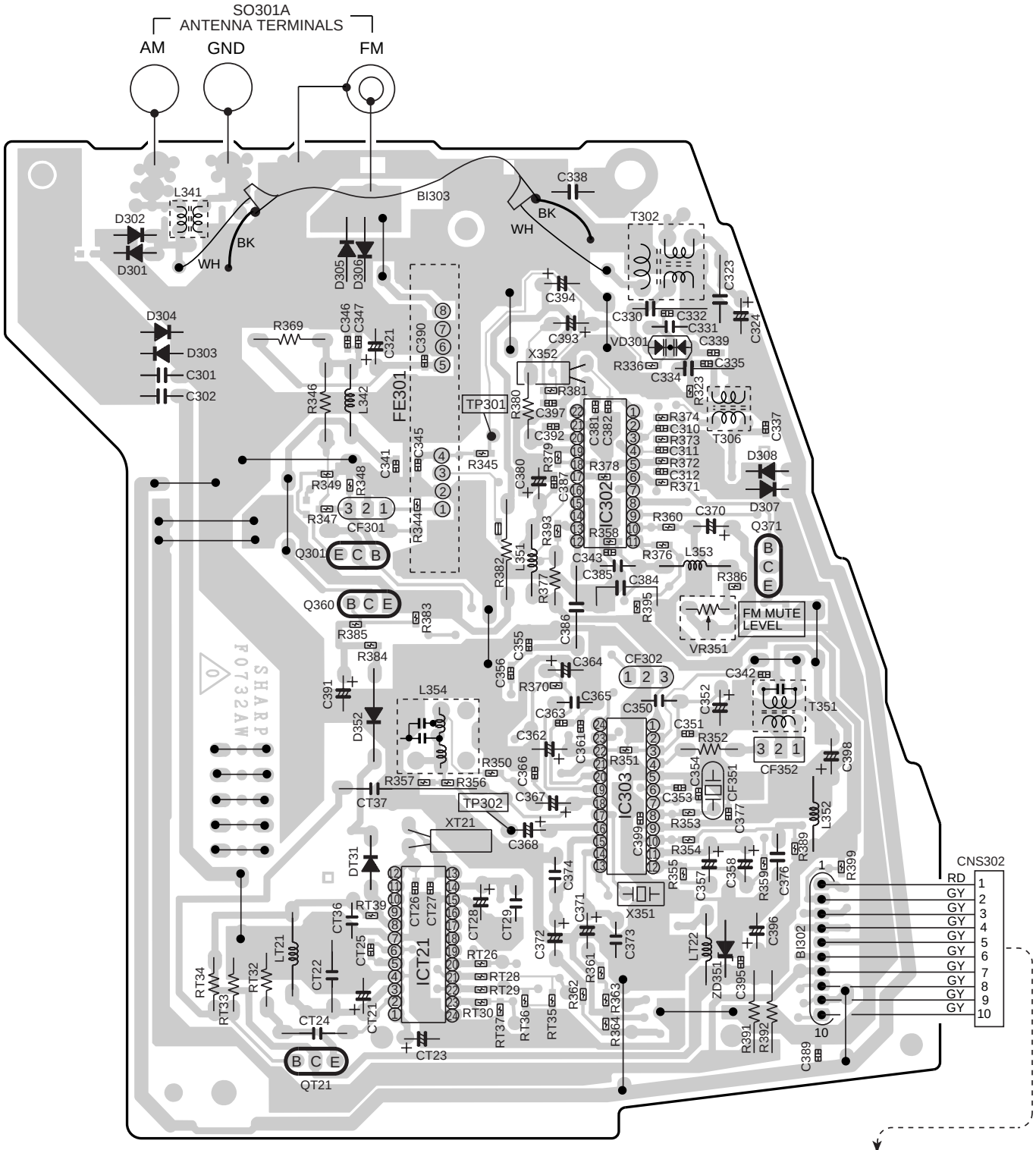
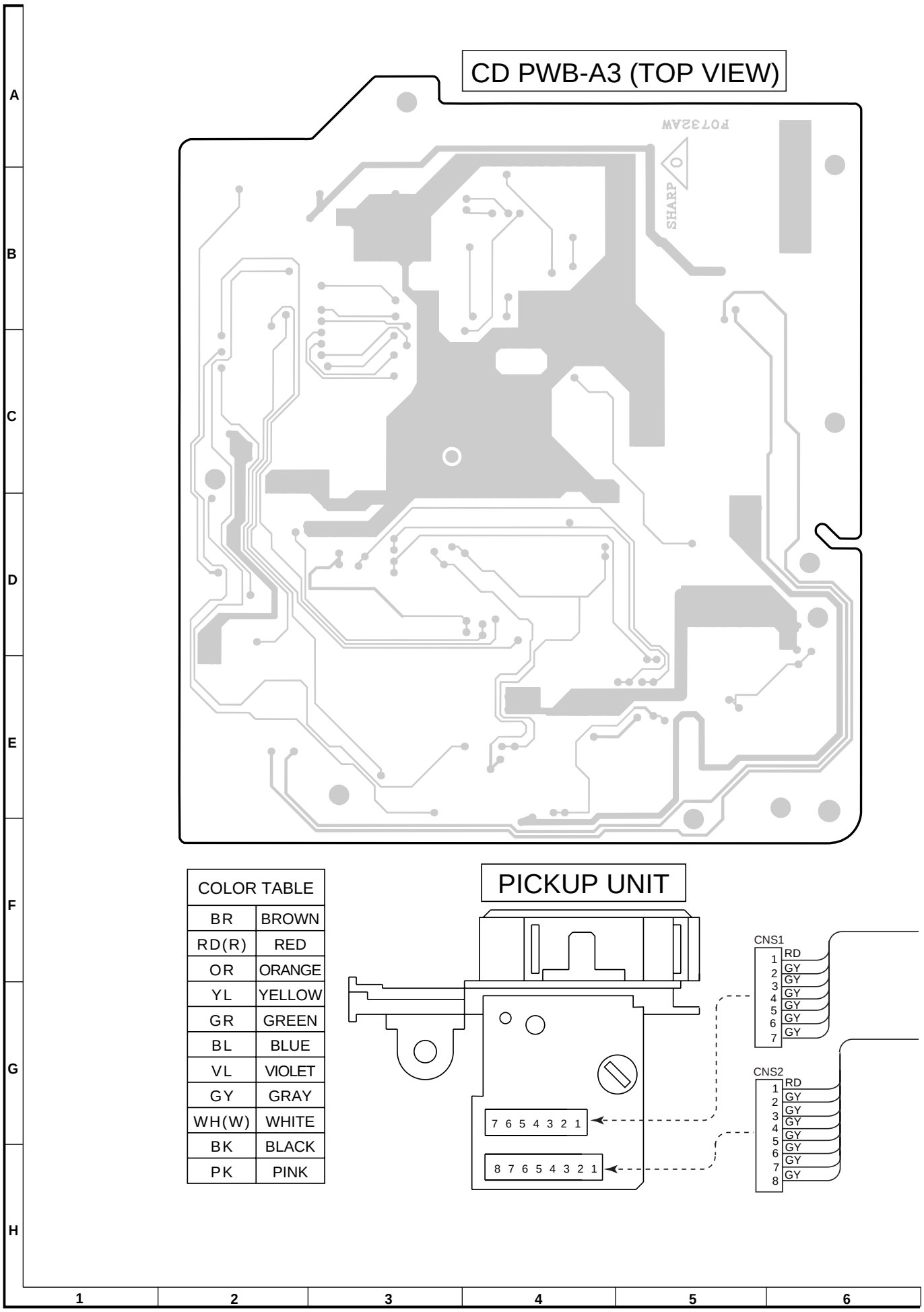


Figure 58 WIRING SIDE OF P.W.BOARD (3/13)



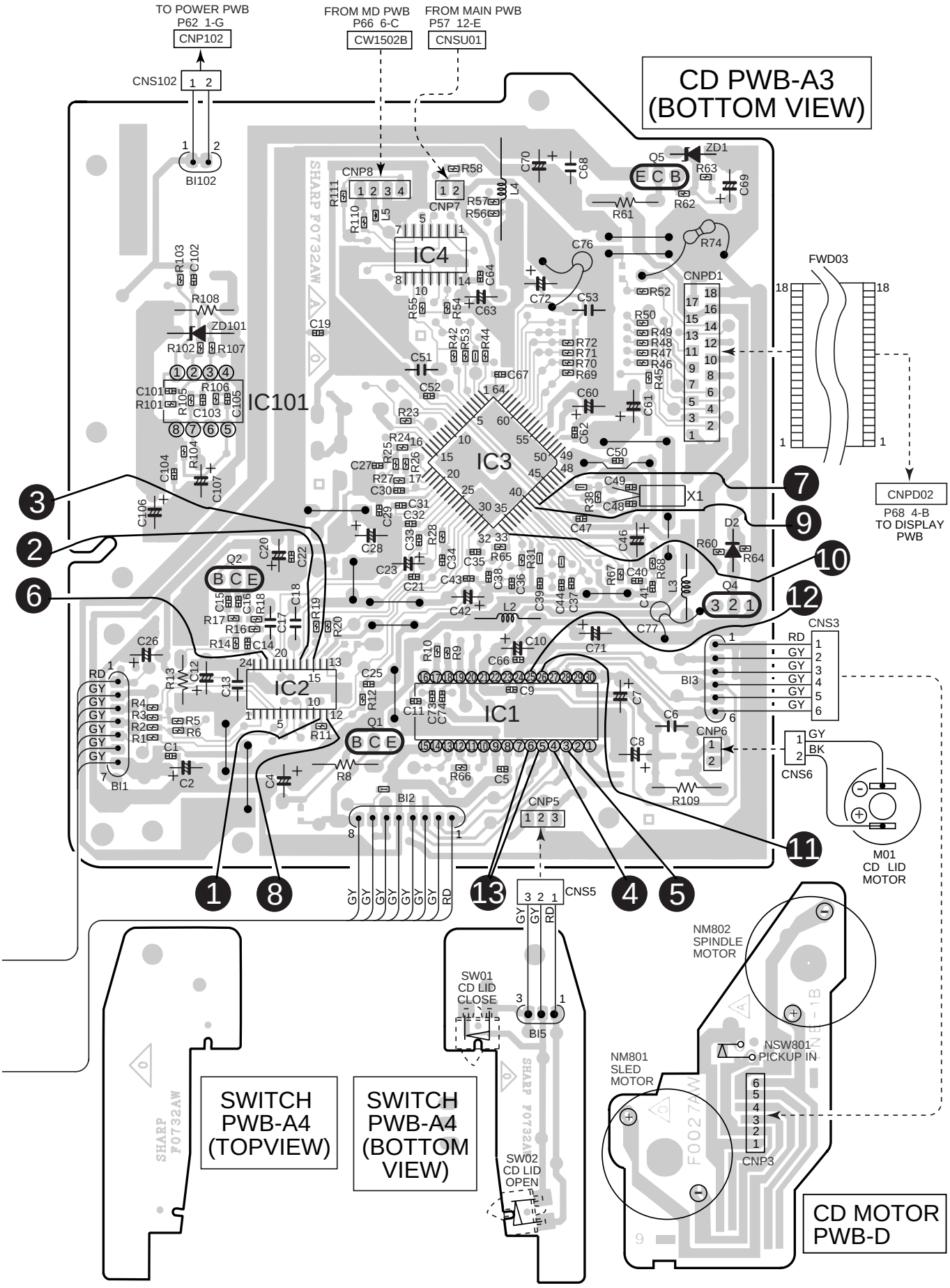
7	8	9	10	11	12

Figure 59 WIRING SIDE OF P.W.BOARD (4/13)



COLOR TABLE	
BR	BROWN
RD(R)	RED
OR	ORANGE
YL	YELLOW
GR	GREEN
BL	BLUE
VL	VIOLET
GY	GRAY
WH(W)	WHITE
BK	BLACK
PK	PINK

Figure 60 WIRING SIDE OF P.W.BOARD (5/13)



• The numbers 1 to 17 are waveform numbers shown in page 72-73.

7	8	9	10	11	12

Figure 61 WIRING SIDE OF P.W.BOARD (6/13)

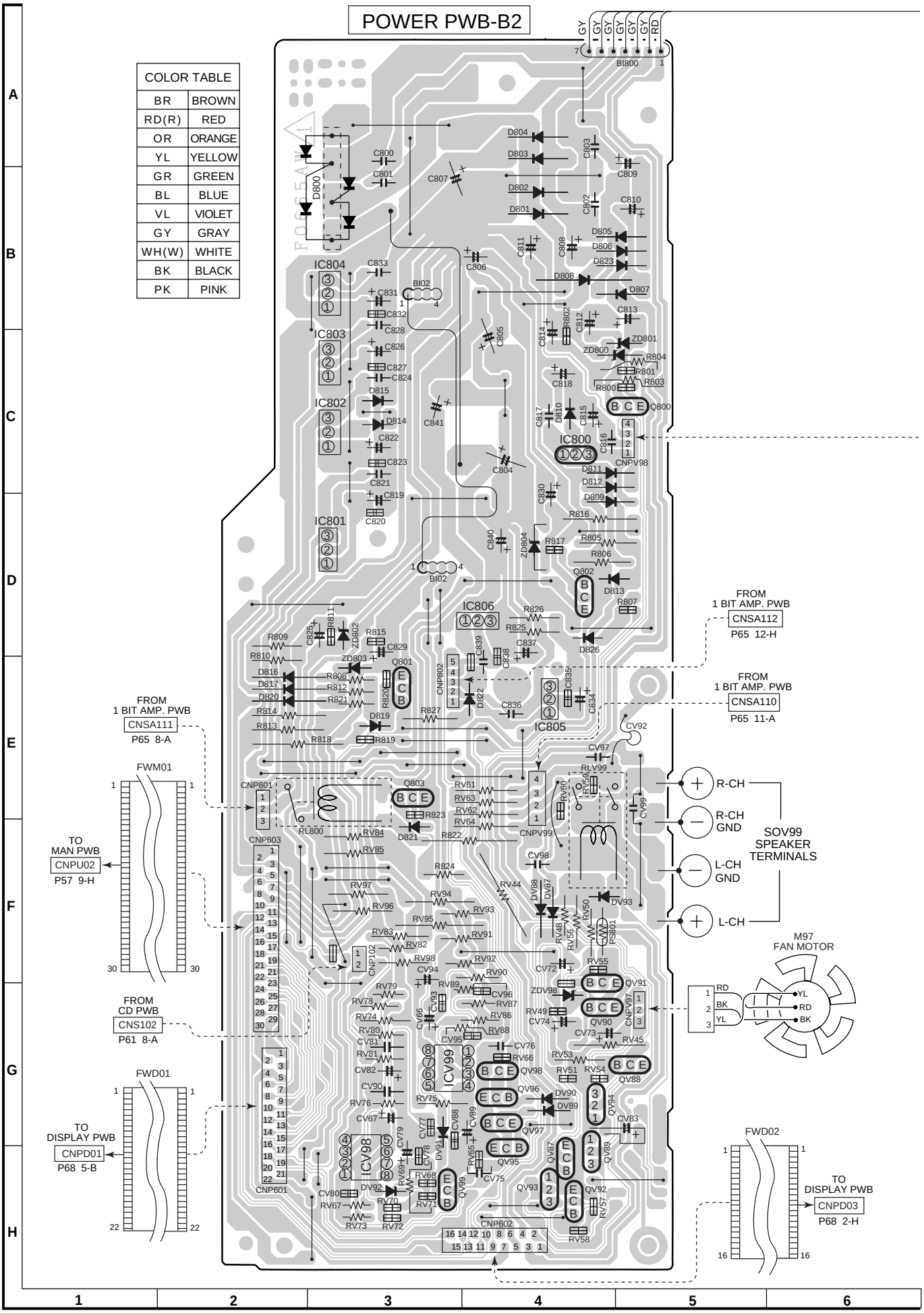
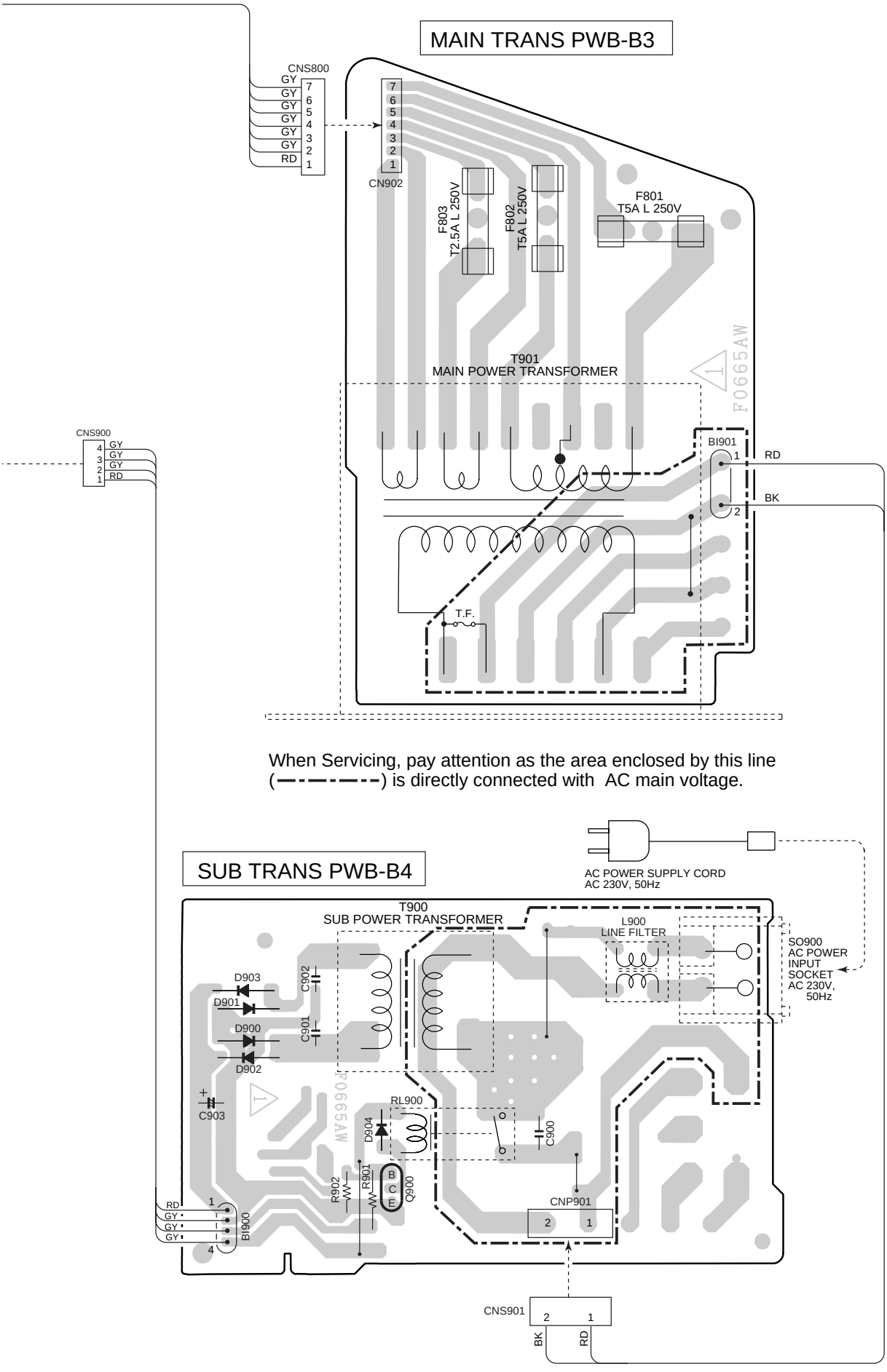


Figure 62 WIRING SIDE OF P.W.BOARD (7/13)



7	8	9	10	11	12

Figure 63 WIRING SIDE OF P.W.BOARD (8/13)

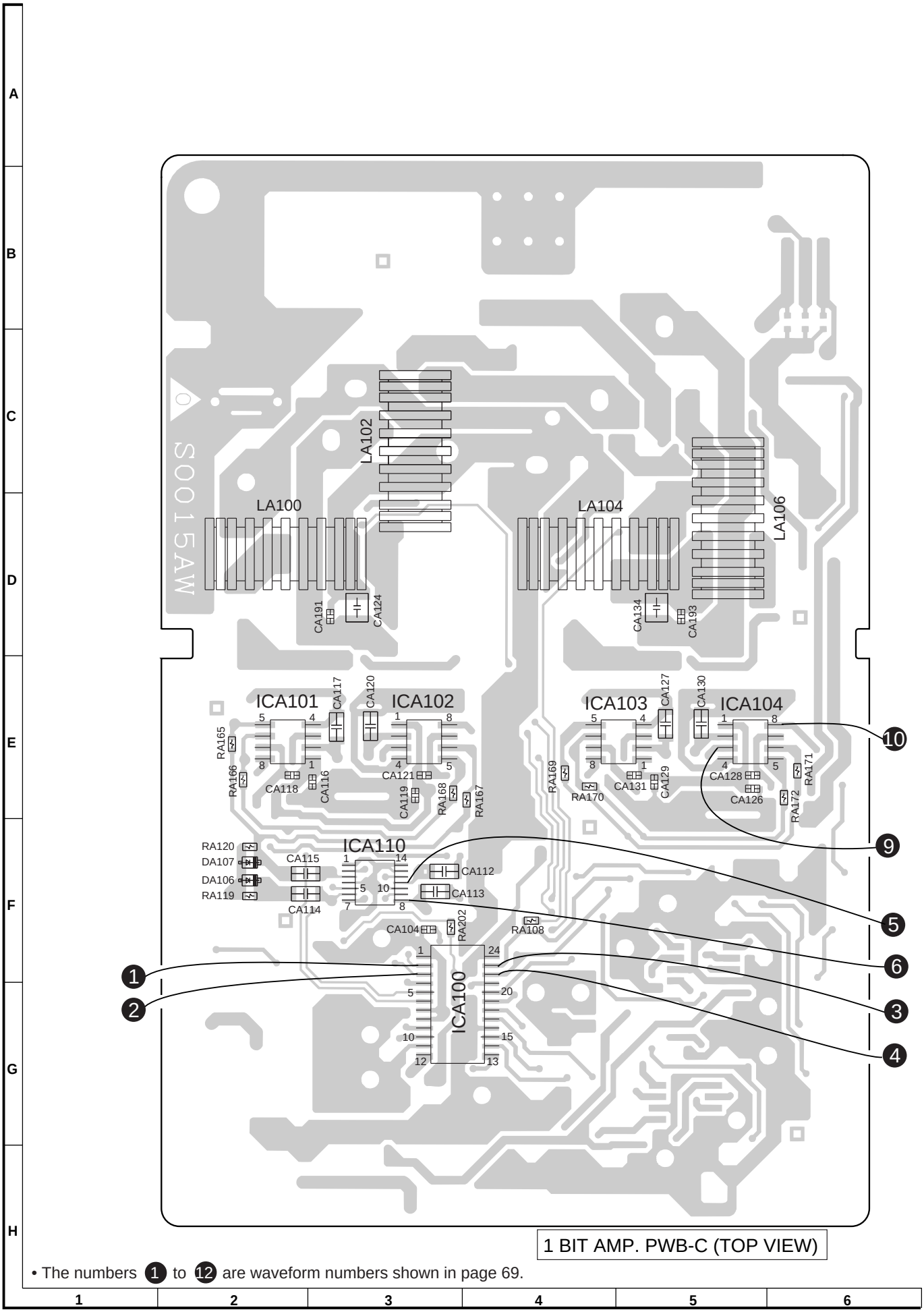


Figure 64 WIRING SIDE OF P.W.BOARD (9/13)

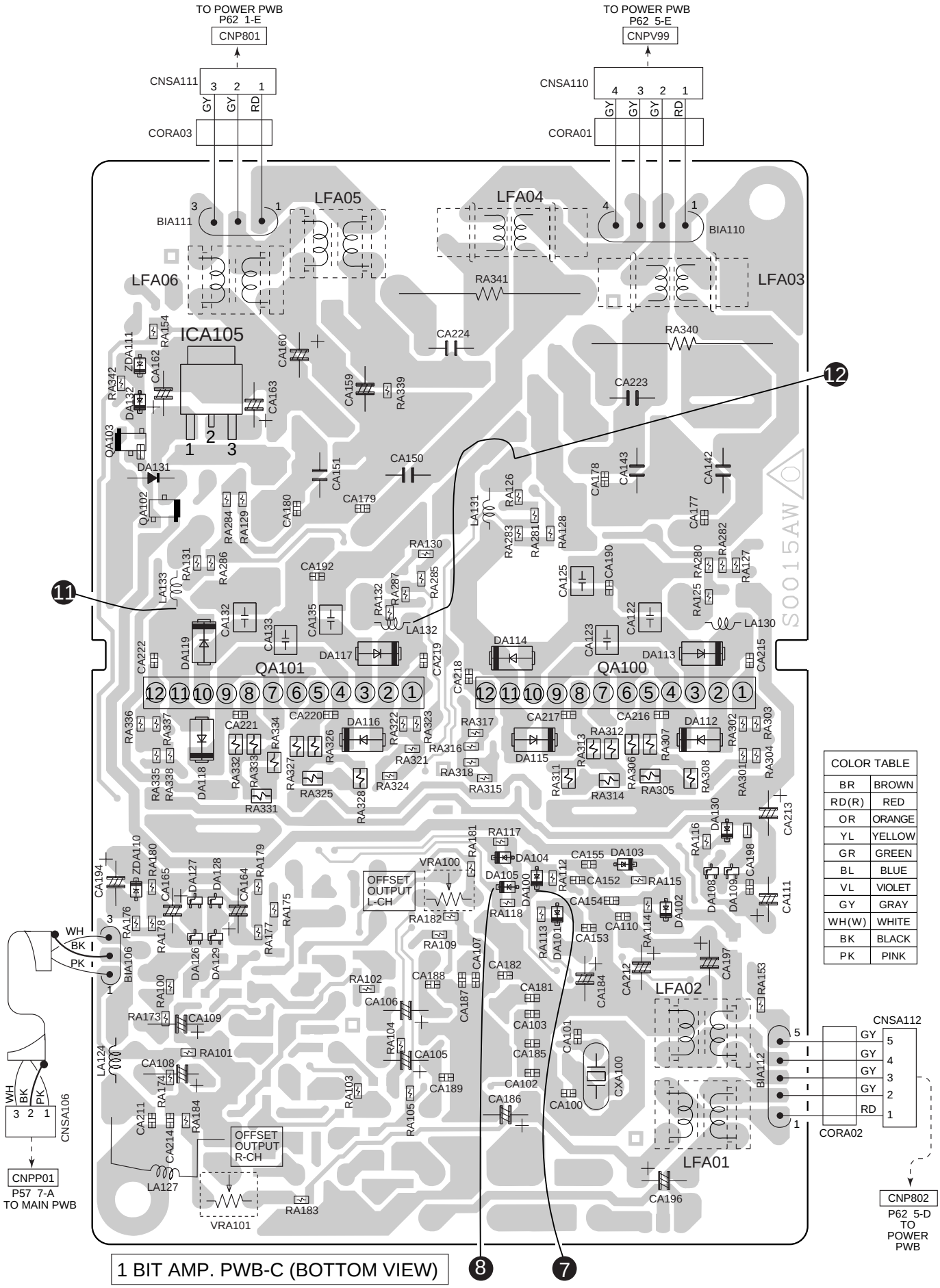


Figure 65 WIRING SIDE OF P.W.BOARD (10/13)

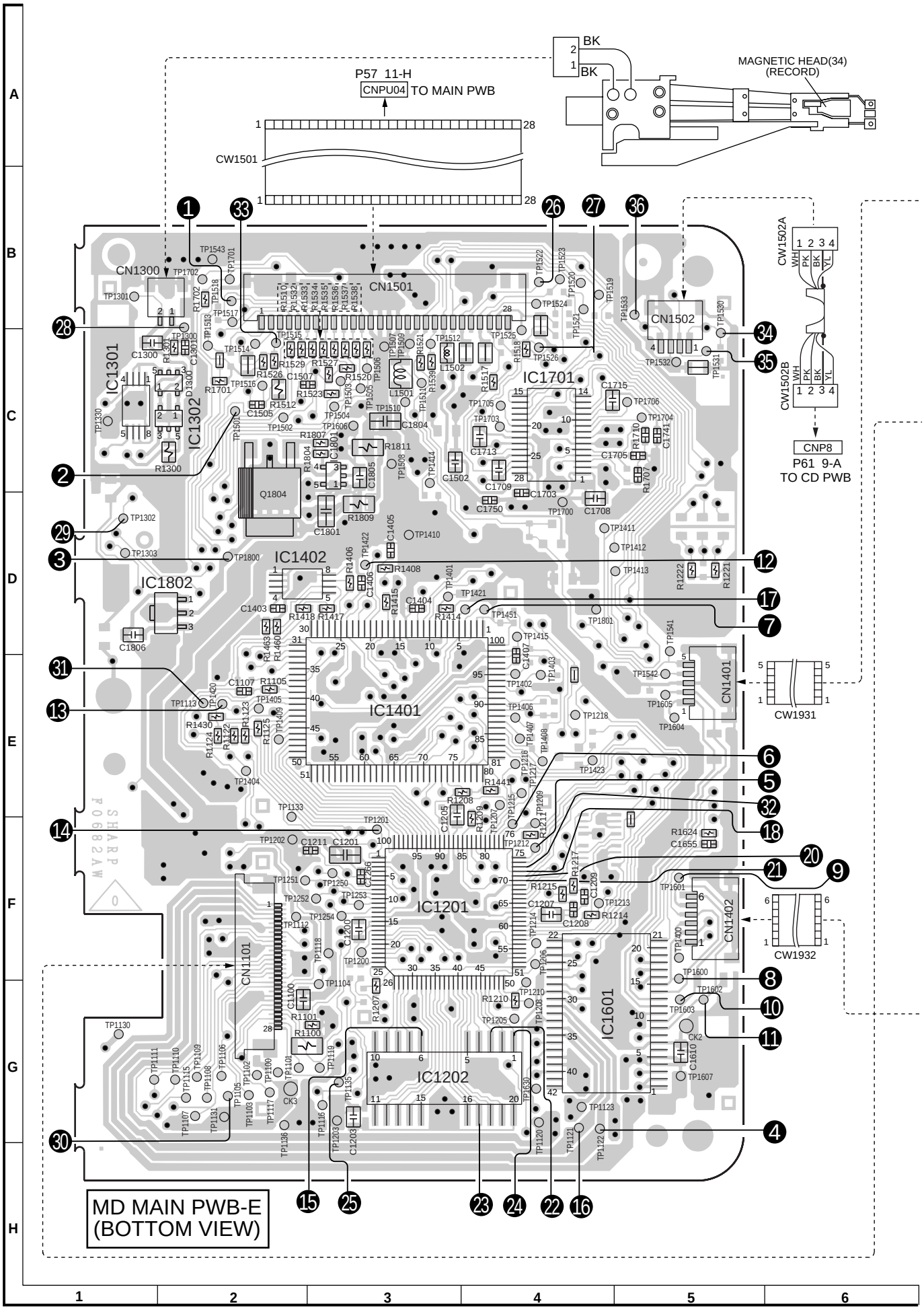
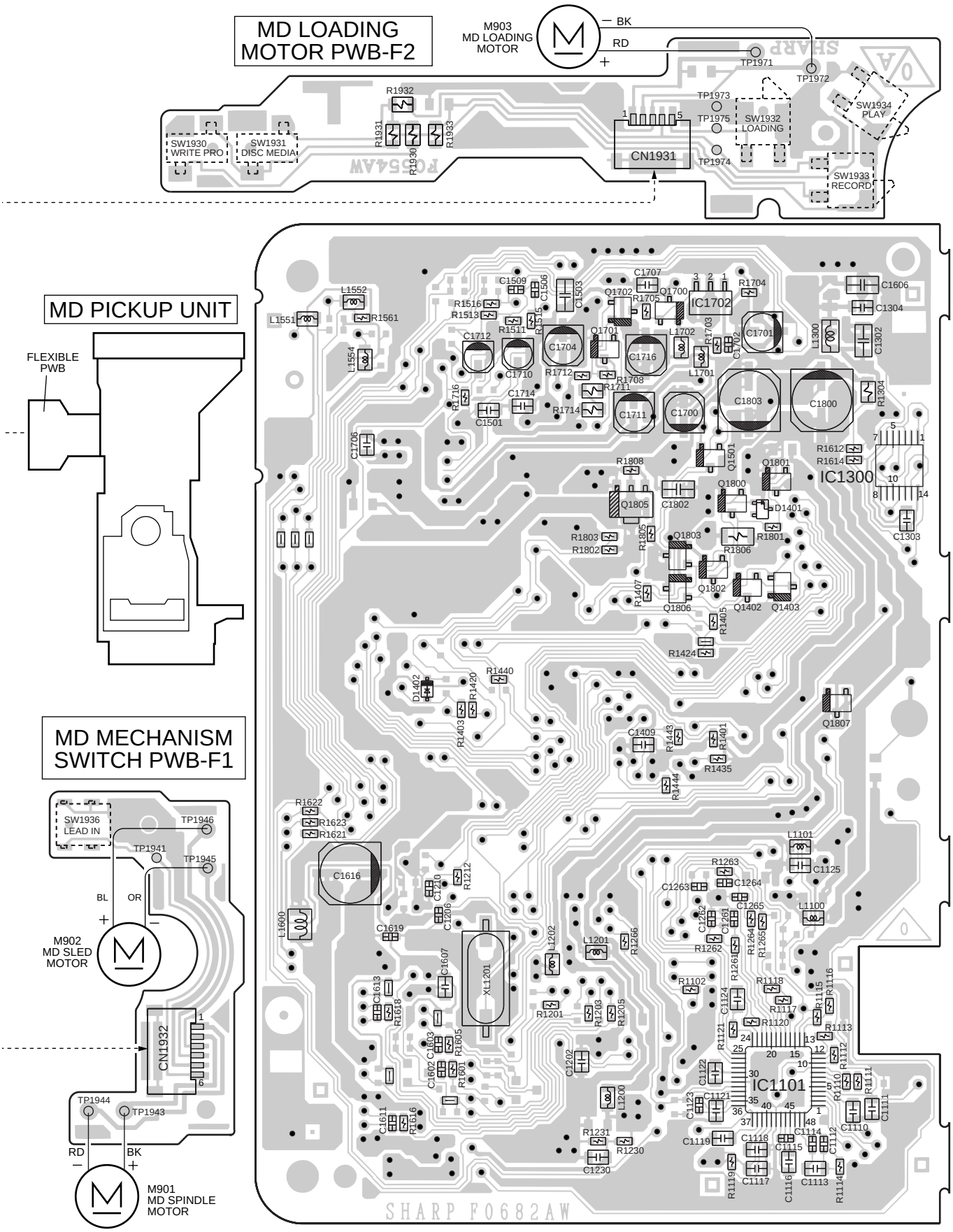


Figure 66 WIRING SIDE OF P.W.BOARD (11/13)



● : Through-hole where the top and bottom patterns are connected.

• The numbers ❶ to ㊱ are waveform numbers shown in page 70 and 71.

7	8	9	10	11	12

Figure 67 WIRING SIDE OF P.W.BOARD (12/13)

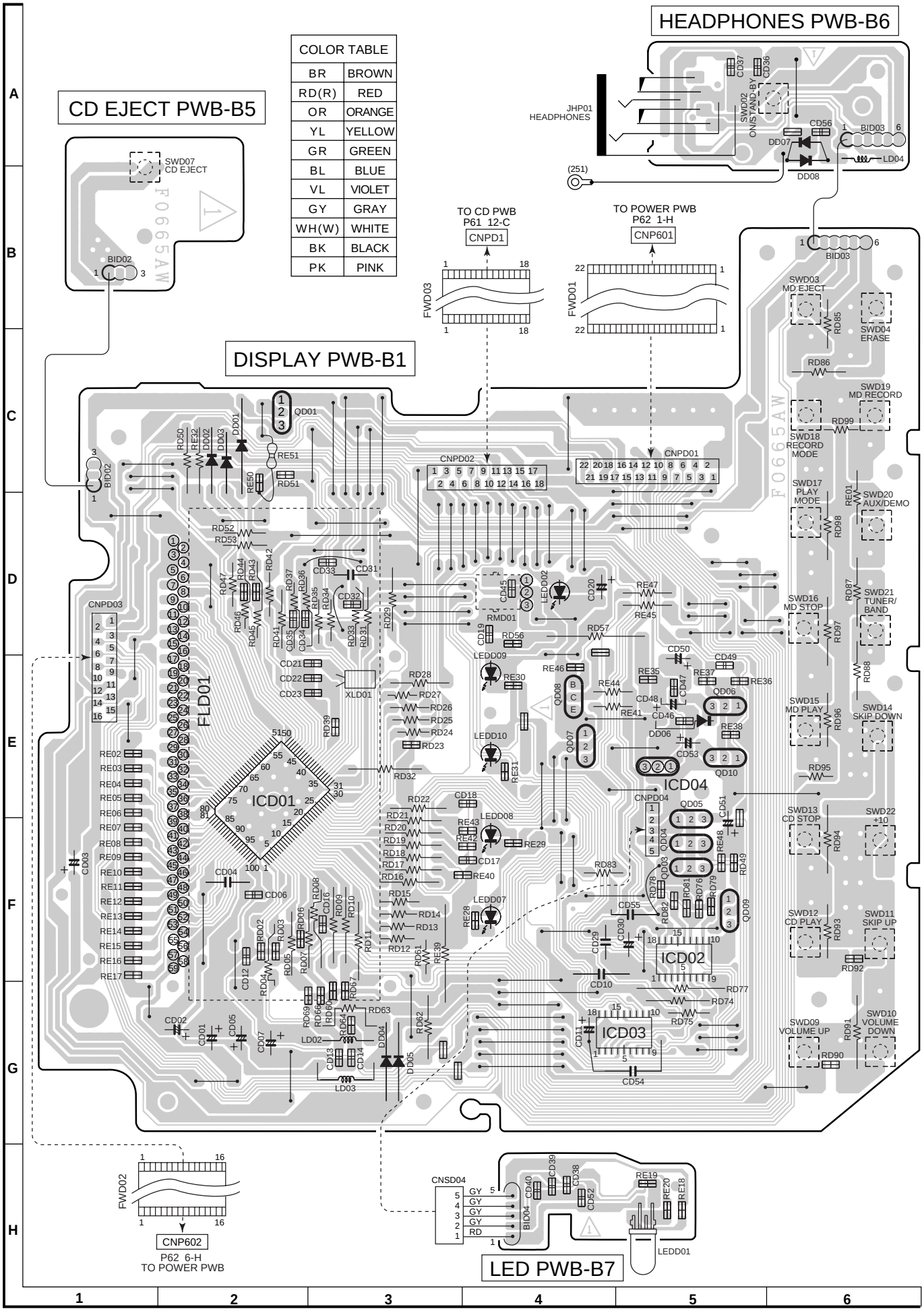
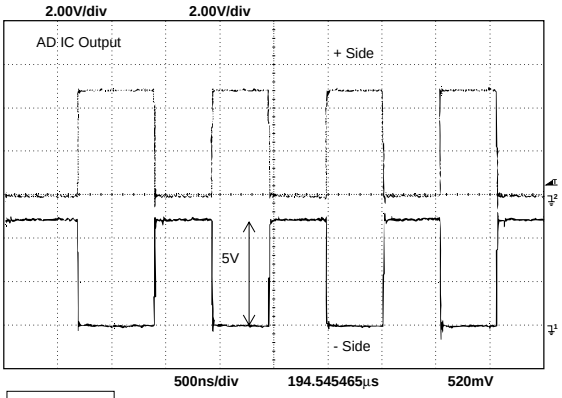


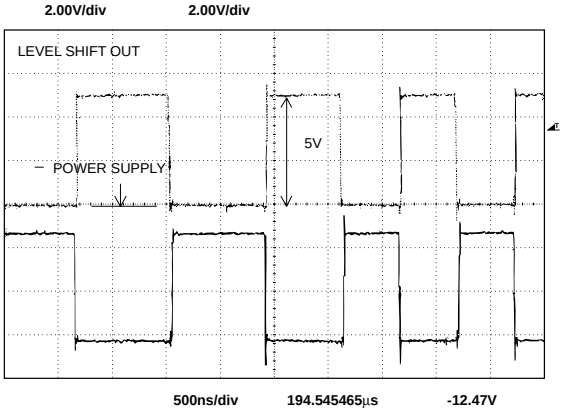
Figure 68 WIRING SIDE OF P.W.BOARD (13/13)

WAVEFORMS OF 1-BIT AMP. CIRCUIT



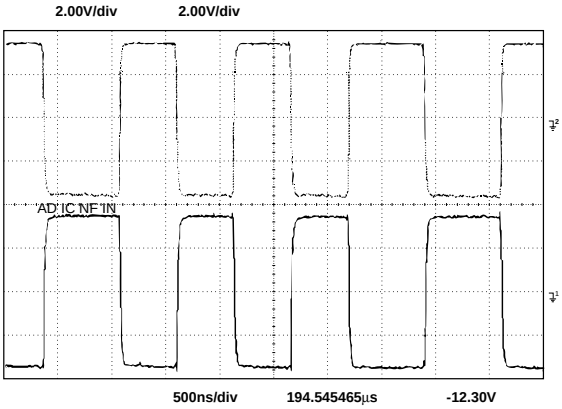
1
2

Amplitude
from 0 to 5 V



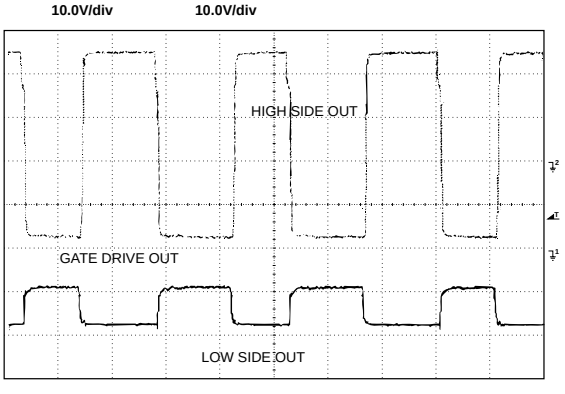
7
8

Waveform after level shift
On the reference side, 5 V amplitude is observed at + 2 V (negative supply voltage), corresponding to VINH and VINL of gate driver during 9 V operation. (Approx. 0.8 VCC and 0.2 VSS)



3
4

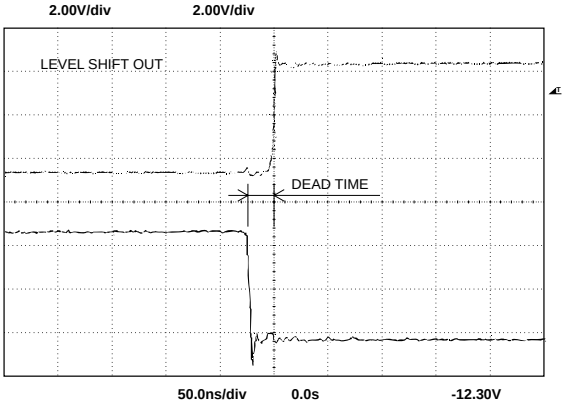
In partial pressure OUT, 4 to 7 V amplitude of GND reference is observed.
In IC of 75 kohms, the reference is 2.5 V because of VREF. Due to imaginary GND of operational amplifier inside IC, the waveform cannot be monitored.
This waveform is partial pressure OUT.



9
10

To make HIGH SIDE FET completely on, the positive supply voltage of + 4.5 V or over is required. At the bootstrap, the gate drive voltage is generated; the HIGH side is driven between (positive power) + 6 V and the negative power.

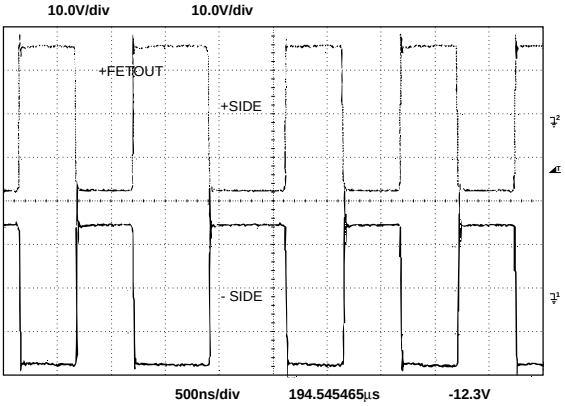
FET is based on the negative supply voltage; the gate voltage of the LOW side FET operates with the negative power and + 9 V.



5
6

ZOOM UP

Dead time is generated by level shift input.
Leading edge is delayed at CR, passing R at DI.
Set value: 20 -25 nsec

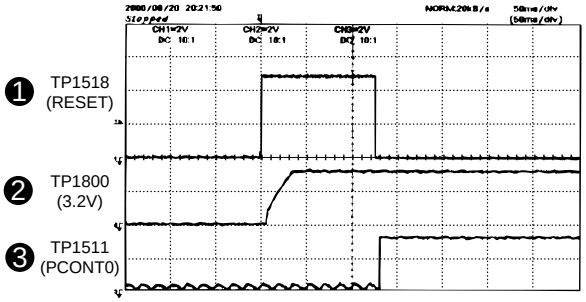


11
12

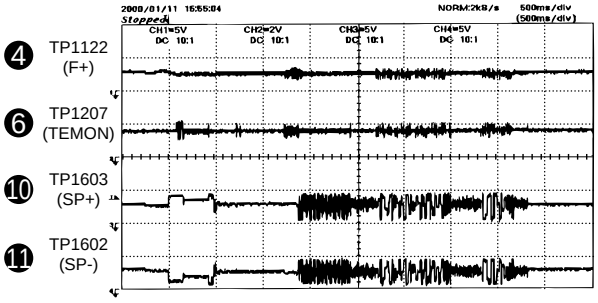
Waveforms before low-pass filters at both ends of the speaker H-bridge may be considered as BTL.
However, here and at the gate drive, dead time is not observed; since bootstrap operates based on output, DEAD TIME part is in floating condition. The waveform on the HI GH side shows that only the booted voltage lowers.

WAVEFORMS OF MD CIRCUIT

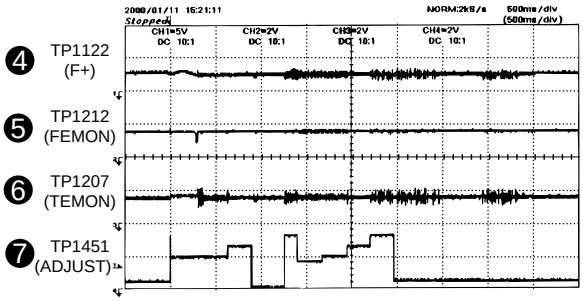
POWER ON



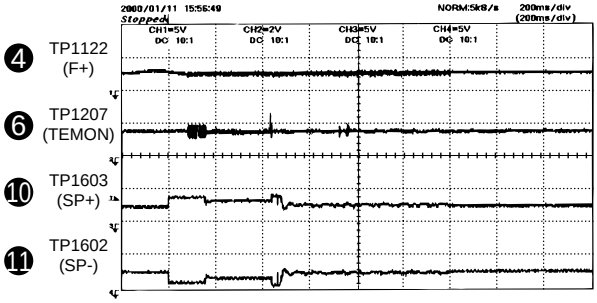
TOC READ (Low reflection disc)



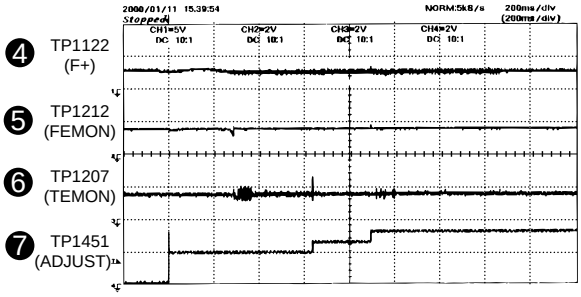
TOC READ (Low reflection disc)



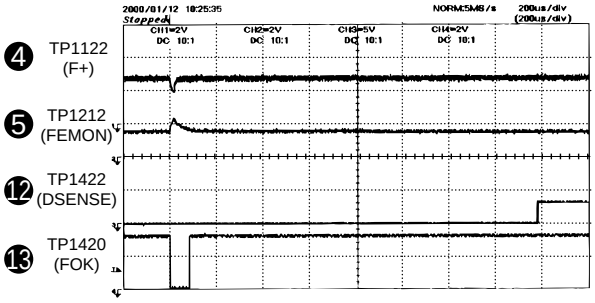
TOC READ (High reflection disc)



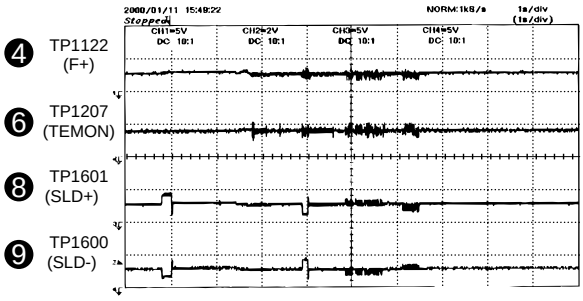
TOC READ (High reflection disc)



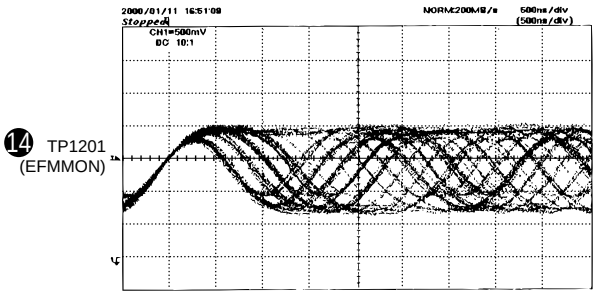
STOP ---> PLAY



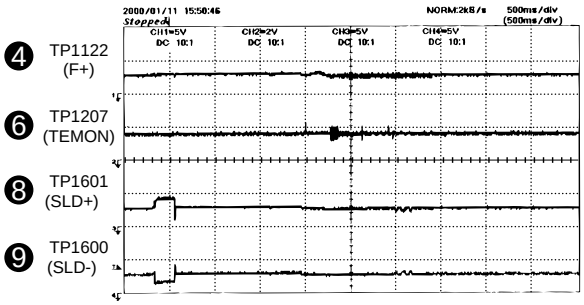
TOC READ (Low reflection disc)



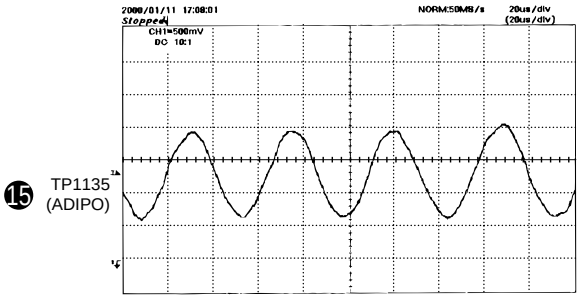
PLAY (Low reflection disc)



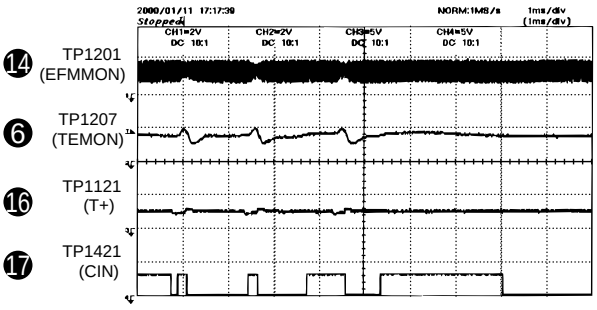
TOC READ(High reflection disc)



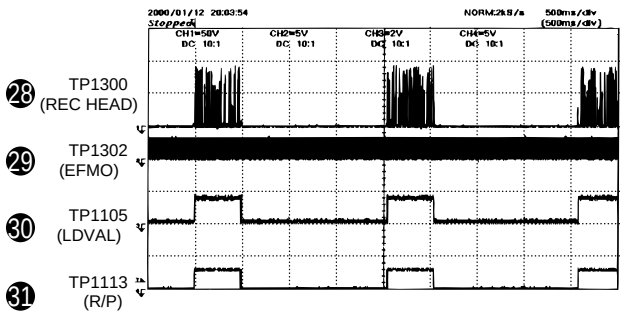
PLAY (Low reflection disc)



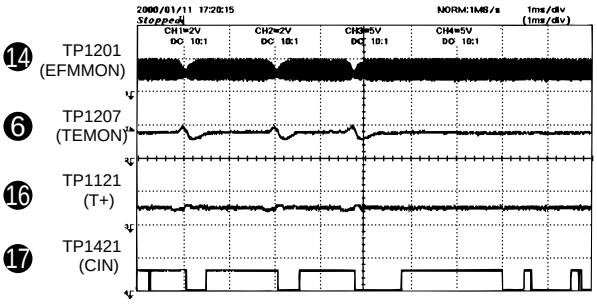
PLAY (Low reflection disc)



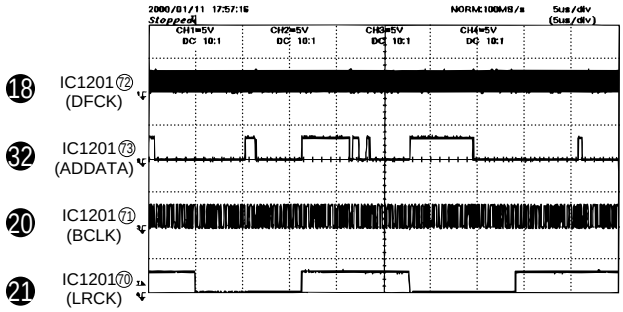
REC



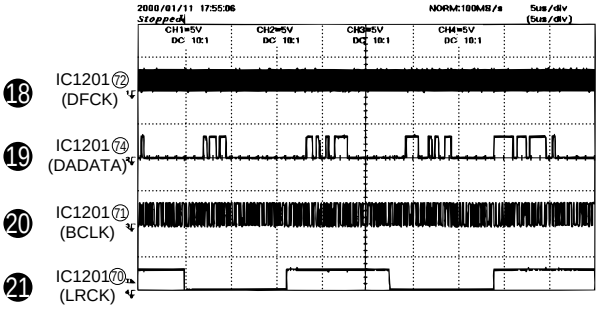
PLAY (High reflection disc)



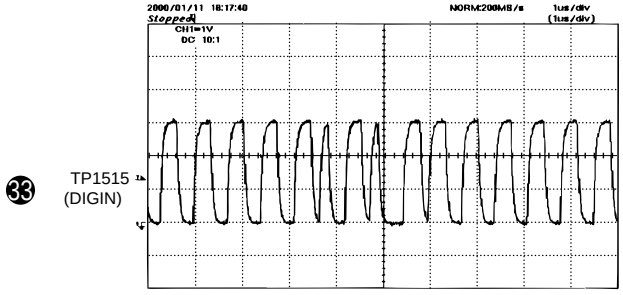
Analog REC



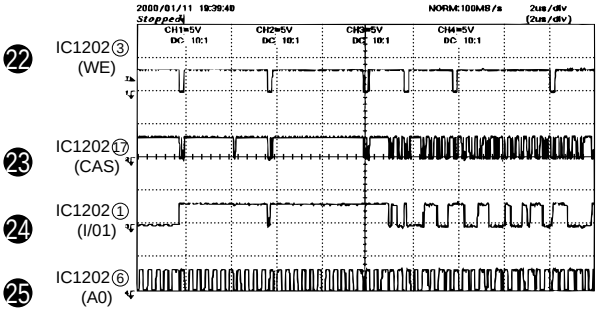
PLAY



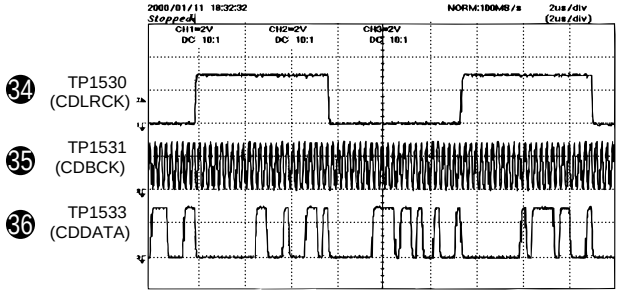
Digital REC



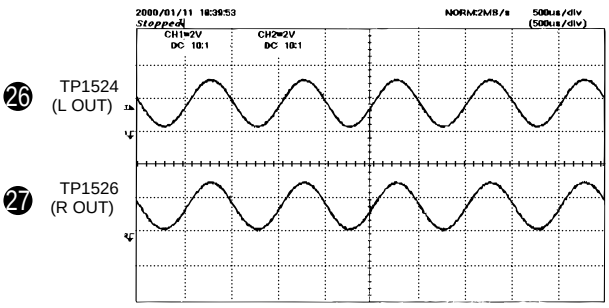
PLAY



Double speed REC

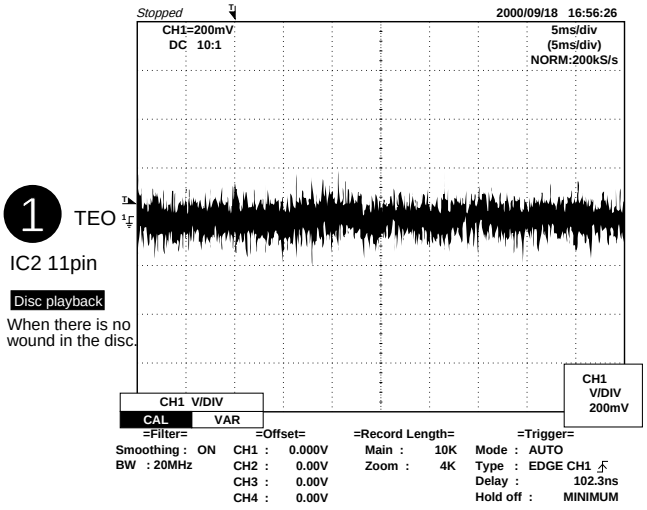


PLAY(1kHz 0dB)

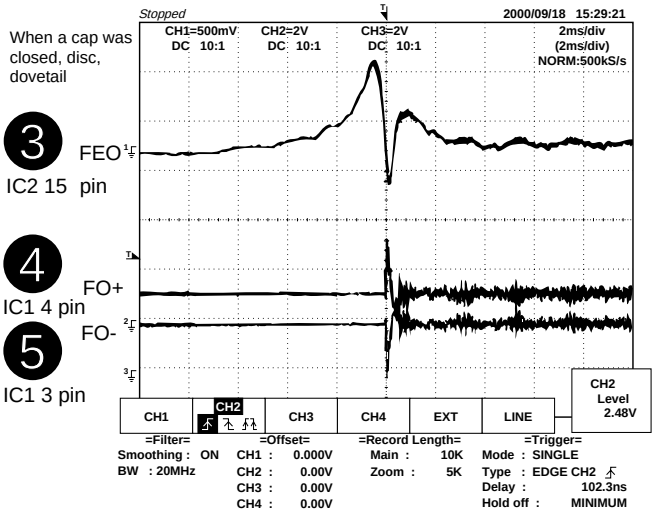


WAVEFORMS OF CD CIRCUIT

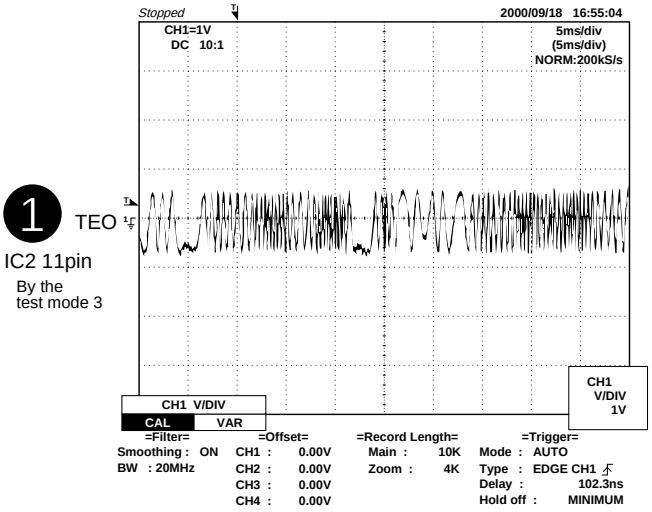
Tracking error



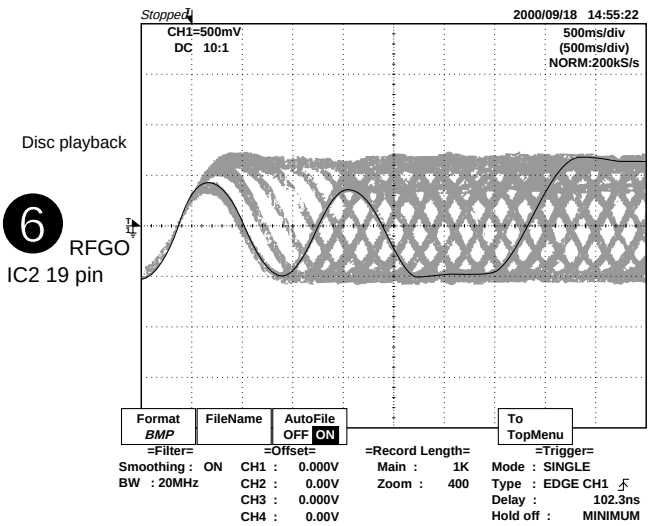
Focus servo on


Stopped
2000/09/18 15:29:21
When a cap was closed, disc, dovetail
CH1=500mV CH2=2V CH3=2V
DC 10:1 DC 10:1 DC 10:1
2ms/div
(2ms/div)
NORM:500kS/s
3 FEO
IC2 15 pin
4 FO+
IC1 4 pin
5 FO-
IC1 3 pin
CH1 CH2 CH3 CH4 EXT LINE
CH2 Level 2.48V
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : ON CH1 : 0.000V Main : 10K Mode : SINGLE
BW : 20MHz CH2 : 0.00V Zoom : 5K Type : EDGE CH2
CH3 : 0.00V Delay : 102.3ns
CH4 : 0.00V Hold off : MINIMUM

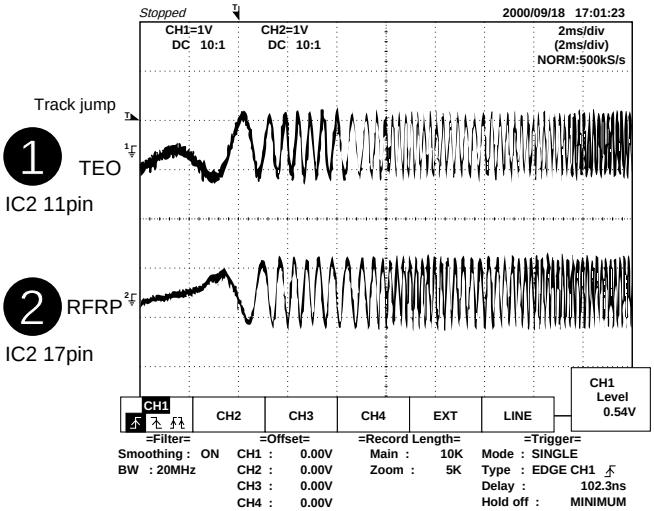
Tracking



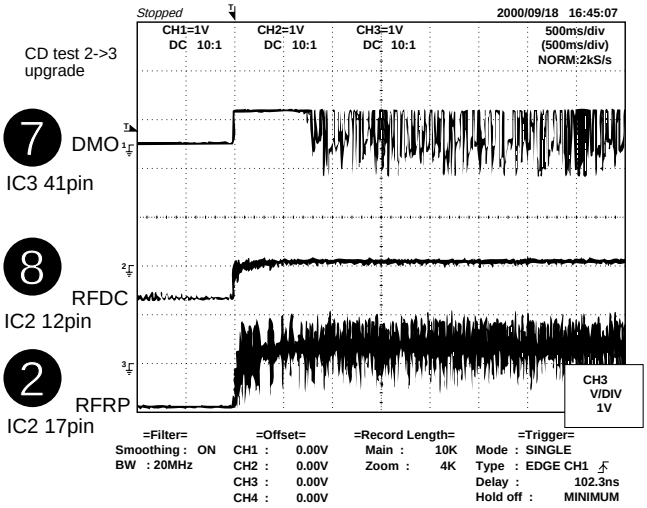
RF



During the tracking jump TEO, RFRP



Disc motor and CD related signal

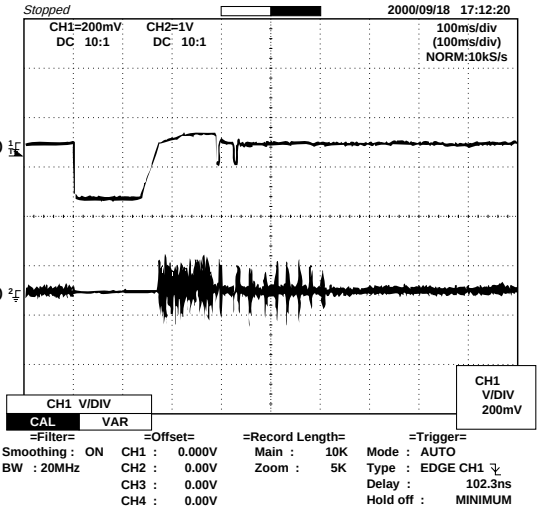


Feed motor and tracking output during the track jump

Track jump

9 FMO
IC3 40 pin

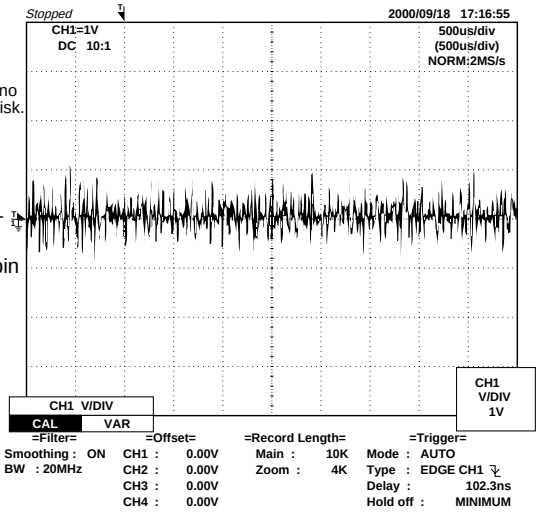
10 FOO
IC3 33 pin


Stopped
2000/09/18 17:12:20
CH1=200mV DC 10:1
CH2=1V DC 10:1
100ms/div (100ms/div) NORM:10kS/s
CH1 V/DIV
CAL VAR
CH1 V/DIV 200mV
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : ON CH1 : 0.000V Main : 10K Mode : AUTO
BW : 20MHz CH2 : 0.00V Zoom : 5K Type : EDGE CH1
CH3 : 0.00V Delay : 102.3ns
CH4 : 0.00V Hold off : MINIMUM

Normal tracking actuator drive

When there is no wound in the disk.

13 TR+
IC1 5pin, 6pin


Stopped
2000/09/18 17:16:55
CH1=1V DC 10:1
500us/div (500us/div) NORM:2MS/s
CH1 V/DIV
CAL VAR
CH1 V/DIV 1V
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : ON CH1 : 0.00V Main : 10K Mode : AUTO
BW : 20MHz CH2 : 0.00V Zoom : 4K Type : EDGE CH1
CH3 : 0.00V Delay : 102.3ns
CH4 : 0.00V Hold off : MINIMUM

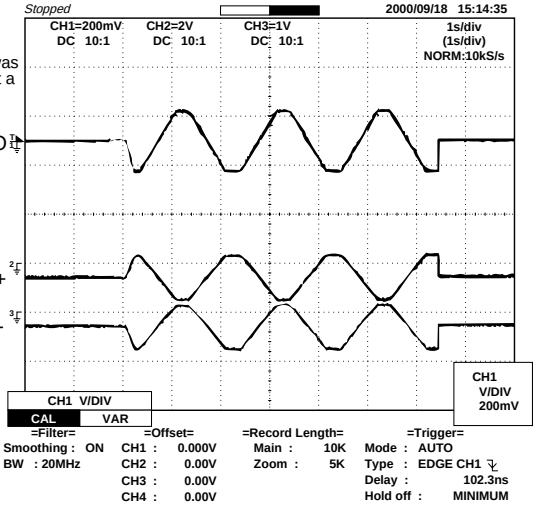
Focus search

It is actuated normally.
When a cap was closed without a disc.

10 FOO
IC3 33 pin

4 FO+
IC1 4 pin

5 FO-
IC1 3 pin

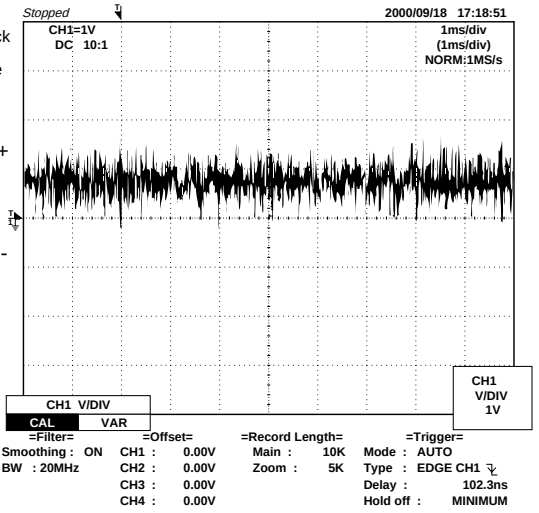

Stopped
2000/09/18 15:14:35
CH1=200mV DC 10:1
CH2=2V DC 10:1
CH3=1V DC 10:1
1s/div (1s/div) NORM:10kS/s
CH1 V/DIV
CAL VAR
CH1 V/DIV 200mV
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : ON CH1 : 0.000V Main : 10K Mode : AUTO
BW : 20MHz CH2 : 0.00V Zoom : 5K Type : EDGE CH1
CH3 : 0.00V Delay : 102.3ns
CH4 : 0.00V Hold off : MINIMUM

Normal focus actuator drive

Disc playback
There is no wound in the disc.

4 FO+
IC1 3 pin

5 FO-
IC1 4 pin


Stopped
2000/09/18 17:18:51
CH1=1V DC 10:1
1ms/div (1ms/div) NORM:1MS/s
CH1 V/DIV
CAL VAR
CH1 V/DIV 1V
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : ON CH1 : 0.00V Main : 10K Mode : AUTO
BW : 20MHz CH2 : 0.00V Zoom : 5K Type : EDGE CH1
CH3 : 0.00V Delay : 102.3ns
CH4 : 0.00V Hold off : MINIMUM

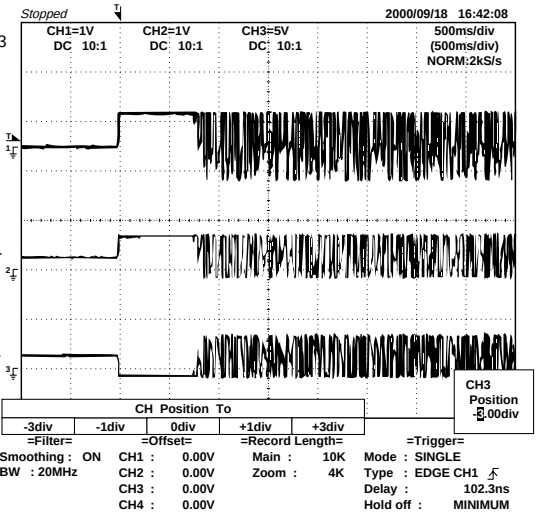
Disc motor output while in the test mode

CD test 2->3 upgrade

7 DMO
IC3 41 pin

11 SP+
IC1 26 pin

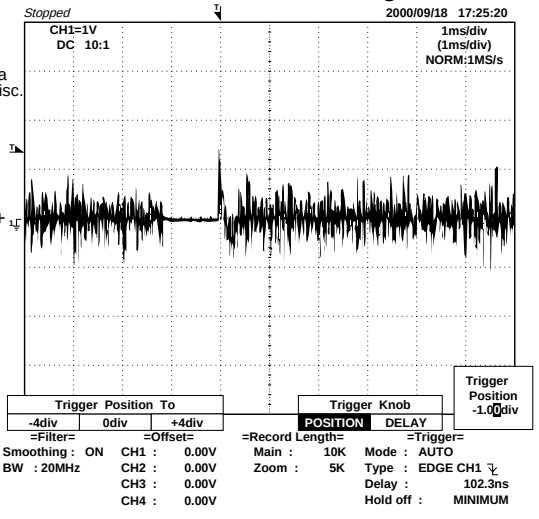
12 SP-
IC1 25 pin


Stopped
2000/09/18 16:42:08
CH1=1V DC 10:1
CH2=1V DC 10:1
CH3=5V DC 10:1
500ms/div (500ms/div) NORM:2kS/s
CH Position To
-3div -1div 0div +1div +3div
CH3 Position -5.00div
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : ON CH1 : 0.00V Main : 10K Mode : SINGLE
BW : 20MHz CH2 : 0.00V Zoom : 4K Type : EDGE CH1
CH3 : 0.00V Delay : 102.3ns
CH4 : 0.00V Hold off : MINIMUM

Actuator drive when damaged

IC1
5 pin-6 pin
When there is a wound in the disc.

13 TR+
IC1 5 pin


Stopped
2000/09/18 17:25:20
CH1=1V DC 10:1
1ms/div (1ms/div) NORM:1MS/s
Trigger Position To
-4div 0div +4div
Trigger Knob
POSITION DELAY
Trigger Position -1.00div
=Filter= =Offset= =Record Length= =Trigger=
Smoothing : ON CH1 : 0.00V Main : 10K Mode : AUTO
BW : 20MHz CH2 : 0.00V Zoom : 5K Type : EDGE CH1
CH3 : 0.00V Delay : 102.3ns
CH4 : 0.00V Hold off : MINIMUM

TROUBLESHOOTING

CD SECTION

When the CD does not function

When the CD section does not operate when the objective lens of the optical pickup is dirty, this section may not operate. Clean the objective lens, and check the playback operation. When this section does not operate even after the above step is taken, check the following items.
Remove the cabinet and follow the trouble shooting instructions.
"Track skipping and/or no TOC (Table Of Contents) may be caused by build up of dust other foreign matter on the laser pickup lens. Before attempting any adjustment make certain that the lens is clean. If not, clean it as mentioned below."

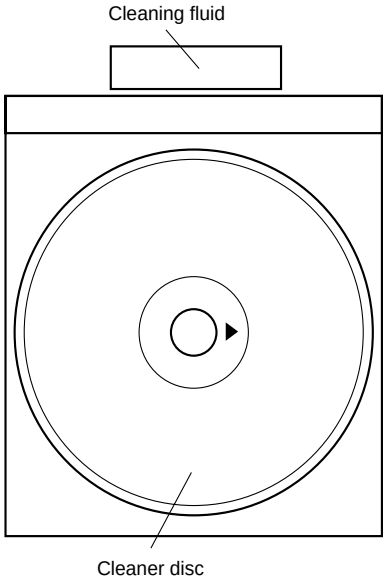
Turn off the power, and wipe the lens softly using a cleaning paper moistened with commercially available cleaning solution so as not to damage it.
Be careful not to touch the lens with bare hands.

Dust gradually accumulates on the objective lens during use, and it may degrade performance. To avoid this problem, use a cleaning disc designed for CD optical pickup lenses.

		Parts code
1.	CD optical pickup Lens cleaner disc	UDSKA0004AFZZ

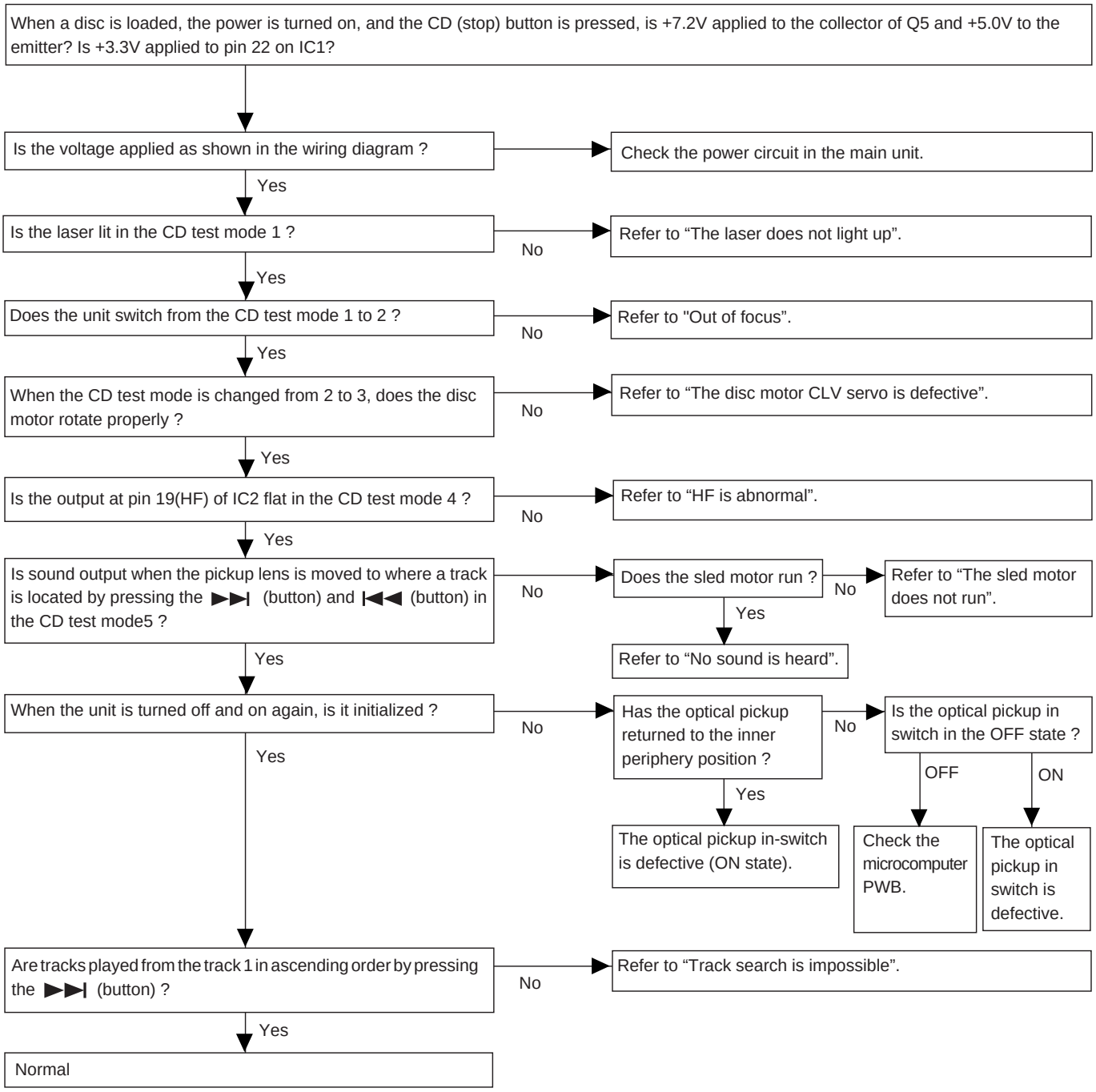
HOW TO USE

1. Using the brush in the cleaner cap, apply 1 or 2 drops of the cleaning fluid to the brush on the CD cleaner disc which has the mark next to it.
2. Place the CD cleaner disc onto the CD disc tray with the brush side down,then press the play button.
3. You will hear music for about 20 seconds and the CD player will automatically stop. If it continuous to turn, press the stop button.

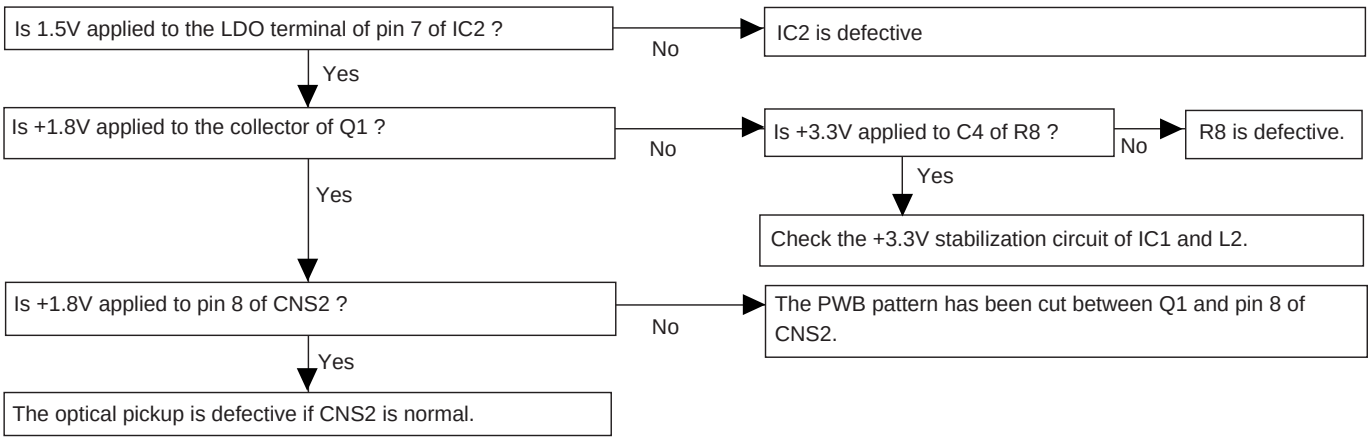


CAUTION

- The CD lens cleaner should be effective for 30-50 operations, however if the brushes become worn out earlier then please the cleaner disc.
- If the CD cleaner brushes become very wet then wipe off any excess fluid with a soft cloth.
- Do not drink the cleaner fluid or allow it to come in contact with the eyes. In the event of this happening then drink and / or rinse with clean water and seek medical advice.
- The CD cleaner disk must not be used on car CD players or on computer CD-ROM drives.
- All rights reserved.Unauthorized duplicating, broadcasting and renting this product is prohibited by law.


When a disc is loaded, the power is turned on, and the CD (stop) button is pressed, is +7.2V applied to the collector of Q5 and +5.0V to the emitter? Is +3.3V applied to pin 22 on IC1?
Is the voltage applied as shown in the wiring diagram ?
Check the power circuit in the main unit.
Yes
Is the laser lit in the CD test mode 1 ?
No
Refer to “The laser does not light up”.
Yes
Does the unit switch from the CD test mode 1 to 2 ?
No
Refer to "Out of focus”.
Yes
When the CD test mode is changed from 2 to 3, does the disc motor rotate properly ?
No
Refer to “The disc motor CLV servo is defective”.
Yes
Is the output at pin 19(HF) of IC2 flat in the CD test mode 4 ?
No
Refer to “HF is abnormal”.
Yes
Is sound output when the pickup lens is moved to where a track is located by pressing the ▶▶| (button) and |◀◀ (button) in the CD test mode5 ?
No
Does the sled motor run ?
No
Refer to “The sled motor does not run”.
Yes
Refer to “No sound is heard”.
Yes
When the unit is turned off and on again, is it initialized ?
No
Has the optical pickup returned to the inner periphery position ?
No
Is the optical pickup in switch in the OFF state ?
OFF
ON
Yes
The optical pickup in-switch is defective (ON state).
Check the microcomputer PWB.
The optical pickup in switch is defective.
Yes
Are tracks played from the track 1 in ascending order by pressing the ▶▶| (button) ?
No
Refer to “Track search is impossible”.
Yes
Normal

• The laser does not light up.


Is 1.5V applied to the LDO terminal of pin 7 of IC2 ?
No
IC2 is defective
Yes
Is +1.8V applied to the collector of Q1 ?
No
Is +3.3V applied to C4 of R8 ?
No
R8 is defective.
Yes
Check the +3.3V stabilization circuit of IC1 and L2.
Yes
Is +1.8V applied to pin 8 of CNS2 ?
No
The PWB pattern has been cut between Q1 and pin 8 of CNS2.
Yes
The optical pickup is defective if CNS2 is normal.

• Out of focus.

Does the pickup lens go up and down when removing the disc ?

No → Refer to "The triangular wave for focus servo does not appear".

Yes ↓

Is the waveform inputted at pin 15 on IC2 when loading a disc ? <Refer to the waveform diagrams on page 72.>

No → Check the optical pickup wires. If OK, the optical pickup is defective.

Yes ↓

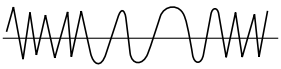
IC2 is defective.

• HF is abnormal.

Is the output (tracking error signal) found at pin 4 and 5 on IC2 in the CD test mode 3 ?

Abnormal → Check between IC2 and CNS1. If OK, the optical pickup is defective.

Normal



Is tracking input found at pin 11 of IC2 ?
<Refer to the waveform diagrms on page 72.>

No → Check the parts around IC2. If OK, IC2 is defective.

Yes ↓

Is the tracking output found at pin 34 on IC3 in the CD test mode 4 ?

No → Check the parts around IC3. If OK, IC3 is defective.

Yes ↓

Is there the output between pin 5 and 6 on IC1 ?

No → Check the parts around IC1. If OK, IC1 is defective.

Yes ↓

Check the portion between IC1 and CNS2 and connection of the optical pickup wires. If OK, the optical pickup is defective.

• Track search is impossible.

Does the sled motor run by pressing the ▶▶| / |◀◀ button in the test mode ?

No → Refer to "The sled motor does not run".

Yes ↓

Is the waveform outputted to pin 11 and 17 on IC2 when a track is jumped ?
<Refer to the waveform diagrams on page 72.>

No → IC2 is defective.

Yes ↓

Is the wave form output found at pin34 and 40 on IC3 when a track is jumped ?
<Refer to the waveform diagrams on page 73.>

No → If the parts around IC1 are normal, IC is defective.

Yes ↓

Is the slide output found at pin25 and 26 on IC1, and the tracking output at pin5 and 26 ?

No → If the parts around IC1 are normal, IC is defective.

Yes ↓

Check the portion between IC1 and CNS2 and connection of the optical pickup wires. If OK, the optical pickup is defective. Check the portion between IC1 and CNS3, sires and periphery of the sled spin motor. If OK, the motor is defective.

• The triangular wave for focus servo does not appear.

Is +3.3V applied to pin 6 on IC3 ?
- No → The +3.3V line of IC3 is defective.
- Yes ↓

Does the triangular wave appear at pin 33 on IC3 ? <Refer to the waveform diagrams on page 73.>
- No → Check the parts around pin 33 on IC3. If OK, IC3 is defective.
- Yes ↓

Does the triangular wave appear at pin13 of IC1 ? <The same waveform as above>
- No → The connection of signal lines between pin 33 on IC3 and pin 13 on IC1 is poor.
- Yes ↓

Does the saw tooth wave appear between pins 3 and 4 of IC1 ? <Refer to the waveform diagrams on page 73.>
- No → Check the parts around IC1 and the power supply line. IF OK, IC1 is defective.
- Yes ↓

Does the saw tooth wave appear between pins 3 and 4 of CNS2 ? <The same waveform as above>
- No → The connection of CNS2 is poor or the optical pickup is defective.
- Yes ↓

The PWB pattern has been cut.

• The disc motor CLV servo is defective.

Does the disc motor rotate in the CD test mode 3 ?
- No → Is the voltage applied between pins 27 and 28 of IC1 for about 0.3-1.5 seconds when switching from the CD test mode 2 to 3 ?
  - Yes → The disc motor is defective or wires have broken.
  - No ↓
- Yes ↓

Does the disc motor rotate too rapidly or slowly ?
- Yes ↓

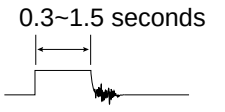
Is the pin 41 on IC3 in the high state for 0.3-1.5 seconds and does it pulse when switching from the CD test mode 2 to 3 ? <Refer to the waveform diagrams on page 72.>
- No → IC3 is defective.
- Yes ↓

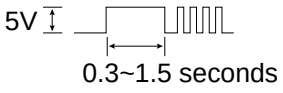
C3 is defective or wires have broken.

Does the eye pattern appear at pin 19 on IC2 ? <Refer to the waveform diagrams on page 72.> (It is OK even if the waveform is not clear.)
- No → Recheck whether the optical pickup objective is dirty. If it is dirty, clean it. Check the connection between pin 19 on IC2 and pin 24 on IC3. If OK, the optical pickup is defective.
- Yes (Vp-p 1.2V waveform) ↓

Is the eye pattern Vp-p 1.2V inputted to the pin 24 on IC3 ?
- No → Check the PWB pattern and C33.
- Yes ↓

IC3 is defective. (After checking the parts around it, replace it.)





SD-CX1H

• No sound is heard.

Is the digital signal outputted from the pin 4 (digital OUT) of IC3 ?
- No → Check the parts around IC3. If OK, IC3 is defective.
- Yes ↓

Is digital signal outputted from the pin 8 (digital OUT) of IC4 ?
- No → Check the parts around IC4. If OK, IC4 is defective.
- Yes ↓

Is the digital signal sent to the MD PWB and pin 13 of CN1501 ?
- No → Check the CD/MD connection sections.
- Yes ↓

OK

• The sled motor does not run.

Is the slide feed signal outputted to pin 40 of IC3 by pressing the ►►I / I◄◄ button in the test mode ?
- No → Check the connection of parts around IC3. If OK, IC3 is defective.
- Yes ↓

Is the slide feed signal outputted between pins 25 and 26 of IC1 ?
- No → Check the connection between pin 20 of IC1 and pin 40 of IC3. If OK, C1 is defective.
- Yes ↓

Is the slide feed voltage applied to both edges of the sled motor ?
- No → Check the PWB pattern.
- Yes ↓

Check the slide motor. If the sled motor does not run when the DC2.0V is applied to its terminal, it is defective.

• No sound is heard during double speed EDIT. (The recording is impossible.)

Is the digital signal outputted from pins 1, 2 and 3 (AOUT) of IC3 ?
- No → Check the parts around IC3. If OK, IC3 is defective.
- Yes ↓

Is the digital signal outputted from pin 3, 6 and 11 (AOUT) of IC4 ?
- No → Check the parts around IC4. If OK, IC4 is defective.
- Yes ↓

Is the digital signal sent to pins 25, 26 and 27 of CN1501 on the MD PWB ?
- No → Check the CD/MD connection sections.
- Yes ↓

OK

MD SECTION

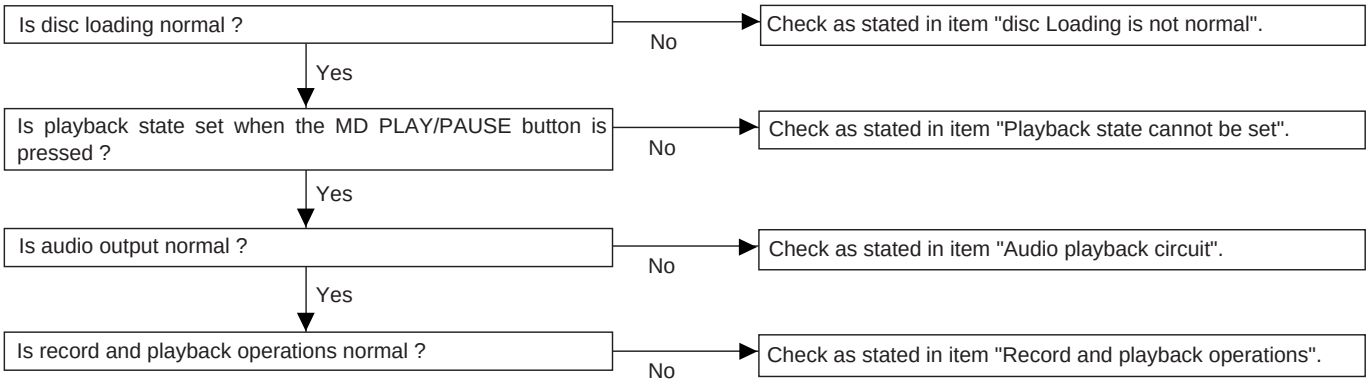
Preparations

If dusts and foreign materials are accumulated on the pickup lens, playback sounds can be skipped or the TOC (Table of Contents) can't be displayed. Clean the object lens and check the playback. When lens are dirty, do the following.

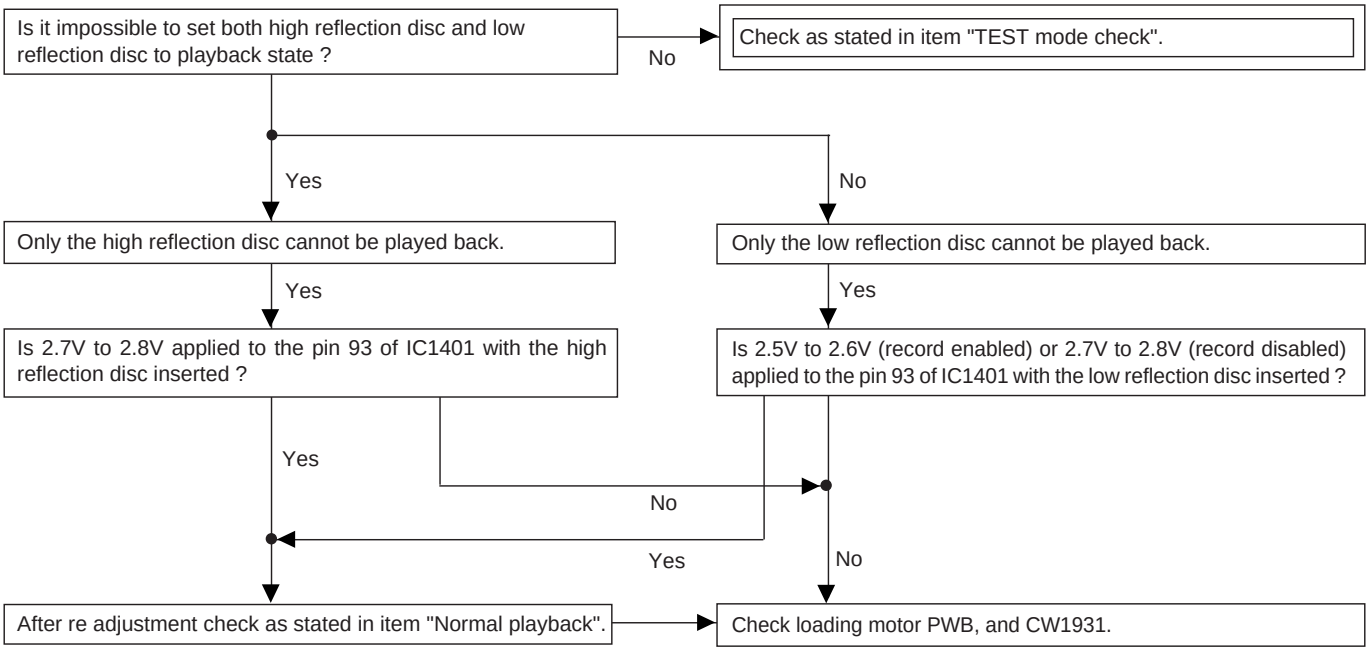
Turn off the power and wipe lens softly with a cleaning paper and a little cleaning solution so as not to damage it.
Do not touch lens with bare hands.

If the MD unit doesn't work

If the MD unit doesn't start after cleaning the pickup objects lens, check it as follows.

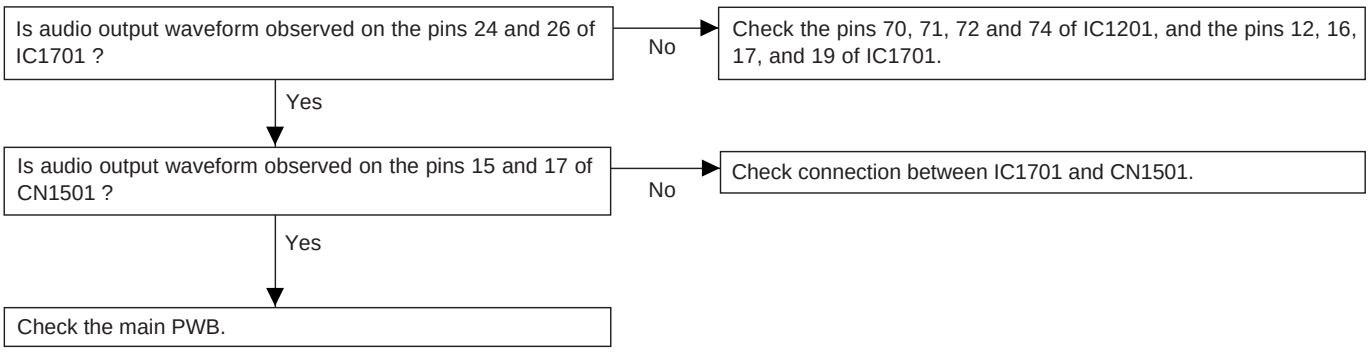

Is disc loading normal ?
No
Check as stated in item "disc Loading is not normal".
Yes
Is playback state set when the MD PLAY/PAUSE button is pressed ?
No
Check as stated in item "Playback state cannot be set".
Yes
Is audio output normal ?
No
Check as stated in item "Audio playback circuit".
Yes
Is record and playback operations normal ?
No
Check as stated in item "Record and playback operations".

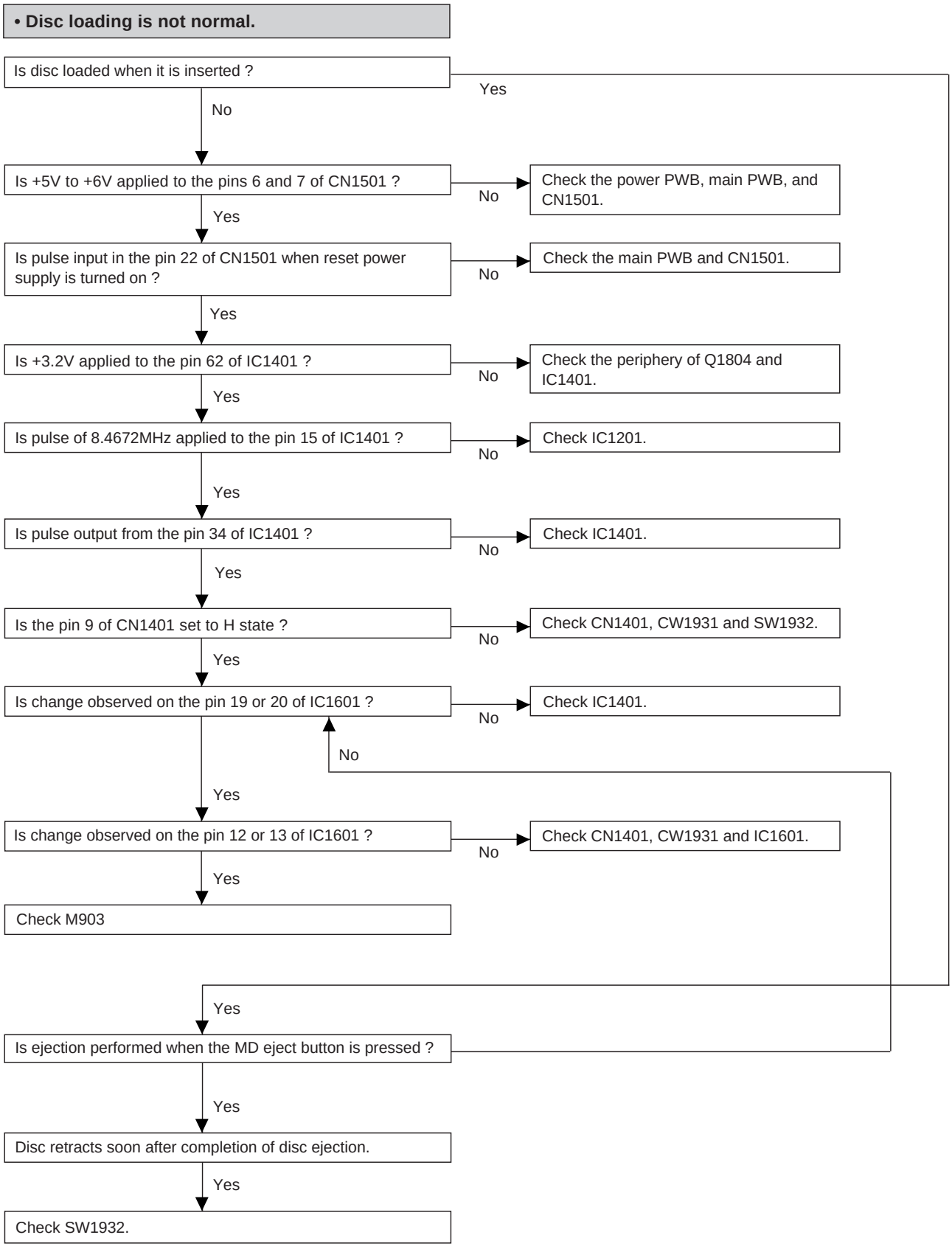
• Playback state cannot be set.


Is it impossible to set both high reflection disc and low reflection disc to playback state ?
No
Check as stated in item "TEST mode check".
Yes
No
Only the high reflection disc cannot be played back.
Only the low reflection disc cannot be played back.
Yes
Yes
Is 2.7V to 2.8V applied to the pin 93 of IC1401 with the high reflection disc inserted ?
Is 2.5V to 2.6V (record enabled) or 2.7V to 2.8V (record disabled) applied to the pin 93 of IC1401 with the low reflection disc inserted ?
Yes
No
Yes
No
After re adjustment check as stated in item "Normal playback".
Check loading motor PWB, and CW1931.

• Audio playback circuit

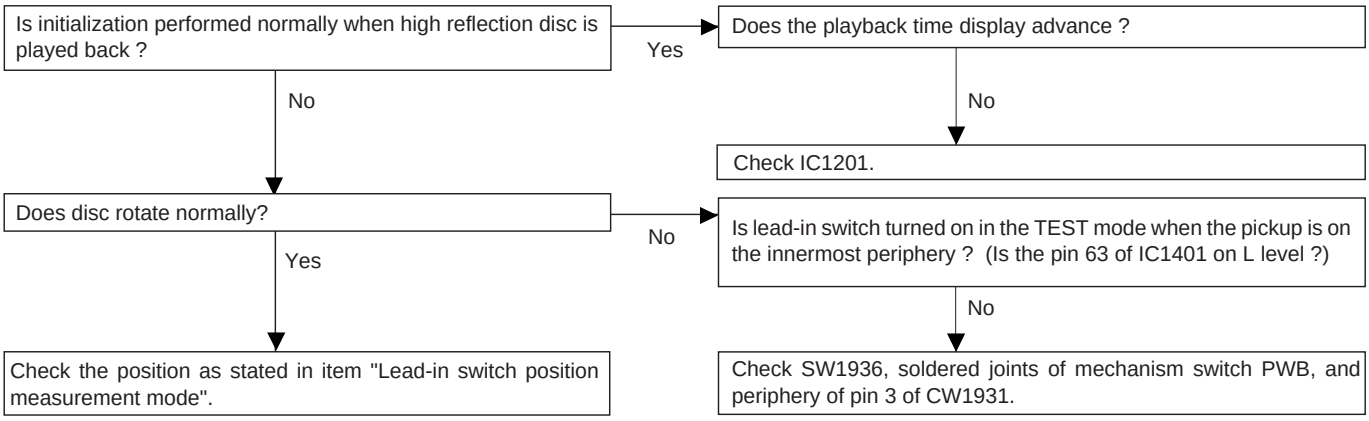
When sound is not output although the playback time display advances during playback in the normal mode.


Is audio output waveform observed on the pins 24 and 26 of IC1701 ?
No
Check the pins 70, 71, 72 and 74 of IC1201, and the pins 12, 16, 17, and 19 of IC1701.
Yes
Is audio output waveform observed on the pins 15 and 17 of CN1501 ?
No
Check connection between IC1701 and CN1501.
Yes
Check the main PWB.


• Disc loading is not normal.
Is disc loaded when it is inserted ?
Yes
No
Is +5V to +6V applied to the pins 6 and 7 of CN1501 ?
No
Check the power PWB, main PWB, and CN1501.
Yes
Is pulse input in the pin 22 of CN1501 when reset power supply is turned on ?
No
Check the main PWB and CN1501.
Yes
Is +3.2V applied to the pin 62 of IC1401 ?
No
Check the periphery of Q1804 and IC1401.
Yes
Is pulse of 8.4672MHz applied to the pin 15 of IC1401 ?
No
Check IC1201.
Yes
Is pulse output from the pin 34 of IC1401 ?
No
Check IC1401.
Yes
Is the pin 9 of CN1401 set to H state ?
No
Check CN1401, CW1931 and SW1932.
Yes
Is change observed on the pin 19 or 20 of IC1601 ?
No
Check IC1401.
No
Yes
Is change observed on the pin 12 or 13 of IC1601 ?
No
Check CN1401, CW1931 and IC1601.
Yes
Check M903
Yes
Is ejection performed when the MD eject button is pressed ?
Yes
Disc retracts soon after completion of disc ejection.
Yes
Check SW1932.

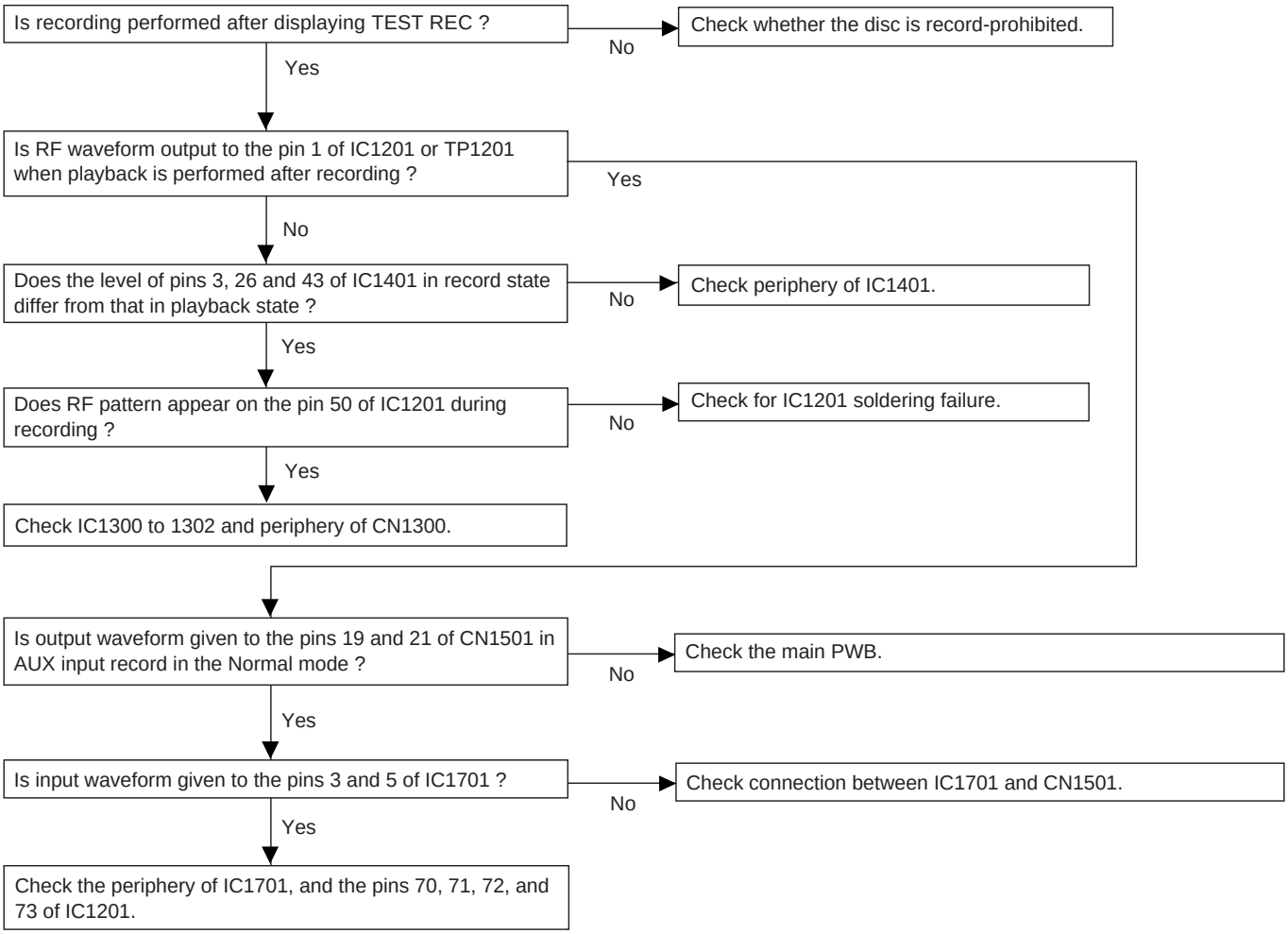
• Normal playback

When it has been confirmed that EEPROM value is normal in the TEST mode


Is initialization performed normally when high reflection disc is played back ?
Yes
Does the playback time display advance ?
No
No
Check IC1201.
Does disc rotate normally?
No
Is lead-in switch turned on in the TEST mode when the pickup is on the innermost periphery ? (Is the pin 63 of IC1401 on L level ?)
Yes
No
Check the position as stated in item "Lead-in switch position measurement mode".
Check SW1936, soldered joints of mechanism switch PWB, and periphery of pin 3 of CW1931.

• Record and playback operations

Insert the low reflection disc, and after verifying the audio output in the normal mode playback set the record/playback TEST mode.


Is recording performed after displaying TEST REC ?
No
Check whether the disc is record-prohibited.
Yes
Is RF waveform output to the pin 1 of IC1201 or TP1201 when playback is performed after recording ?
Yes
No
Does the level of pins 3, 26 and 43 of IC1401 in record state differ from that in playback state ?
No
Check periphery of IC1401.
Yes
Does RF pattern appear on the pin 50 of IC1201 during recording ?
No
Check for IC1201 soldering failure.
Yes
Check IC1300 to 1302 and periphery of CN1300.
Is output waveform given to the pins 19 and 21 of CN1501 in AUX input record in the Normal mode ?
No
Check the main PWB.
Yes
Is input waveform given to the pins 3 and 5 of IC1701 ?
No
Check connection between IC1701 and CN1501.
Yes
Check the periphery of IC1701, and the pins 70, 71, 72, and 73 of IC1201.

Check in the test mode

• The spindle motor does not rotate.

Is waveform output from the pins 25 of IC1201 in the step 4 of AUTO auxiliary adjustment mode of TEST mode ?

No → Check the pins 25 of IC1201, soldering of peripheral circuit, and parts.

Yes ↓

Is waveform output from the pins 9 and 10 of IC1601 and the pins 4 and 5 of CN1401 ?

No → Check IC1601, CN1402, and soldering of mechanism switch PWB.

Yes ↓

Replace with a spindle motor (complete).

• The sled motor does not rotate.

Do the pins 23 of IC1201 change with the ►► / ◄◄ button ?

Yes → Check the waveform of pins 23 of IC1201, peripheral parts, and soldering.

No ↓

Do the pins 14 and 15 of IC1601 and the pins 1 and 2 of CN1401 change with the ►► / ◄◄ button ?

No → Check IC1601 and soldering of CN1401

Yes ↓

Does voltage of the + and - terminals on the sled motor change with the ►► / ◄◄ button ?

No → Check the soldering connected to the sled motor and for disconnection.

Yes ↓

Replace the sled motor.

FUNCTION TABLE OF IC

IC3 VHiTC9490F/-1: Servo/Signal Control (TC9490F) (1/2)

<table>
<tr><th>Pin No.</th><th>Terminal Name</th><th>Input/Output</th><th>Function</th></tr>
<tr><td>1</td><td>BCK</td><td>Output</td><td>Bit clock output terminal. 32fs, 48fs or 64fs can be selected by command.</td></tr>
<tr><td>2</td><td>LRCK</td><td>Output</td><td>L/R channel clock output terminal. L channel: "L", R channel: "H".
the output polarity can be inverted by command.</td></tr>
<tr><td>3</td><td>AOUT</td><td>Output</td><td>Audio data output terminal. MSB/LSB fast can be selected by command.</td></tr>
<tr><td>4</td><td>DOUT</td><td>Output</td><td>Digital out output terminal. Up to double speed can be output.</td></tr>
<tr><td>5*</td><td>IPF</td><td>Output</td><td>Correction flag output terminal. When the correction impossible symbol appears if the AOUT output corresponds to the C2 correction output: "H".</td></tr>
<tr><td>6</td><td>VDD3</td><td>Input</td><td>Digital 3.3V power supply terminal.</td></tr>
<tr><td>7</td><td>VSS3</td><td>—</td><td>Digital GND terminal.</td></tr>
<tr><td>8*</td><td>SBOK</td><td>Output</td><td>Subcode Q data CRCC decision result output terminal. When the decision result is OK: "H".</td></tr>
<tr><td>9*</td><td>CLCK</td><td>Input/Output</td><td>Clock input/output terminal for subcodes P-W data reading.
The input/output polarity can be selected by command.</td></tr>
<tr><td>10*</td><td>DATA</td><td>Output</td><td>Subcodes P-W data output terminal.</td></tr>
<tr><td>11*</td><td>SFSY</td><td>Output</td><td>Playback system frame sync signal output terminal.</td></tr>
<tr><td>12*</td><td>SBSY</td><td>Output</td><td>Subcode block sync output terminal.
In the S1 position when the subcode sync is detected: "H".</td></tr>
<tr><td>13
14*</td><td>/HSO
/UHSO</td><td>Output
Output</td><td>Playback speed mode flag output terminal.
<table>
<tr><th>/UHSO</th><th>/HSO</th><th>Playback speed</th></tr>
<tr><td>H</td><td>H</td><td>Normal speed playback</td></tr>
<tr><td>H</td><td>L</td><td>Double speed playback</td></tr>
<tr><td>L</td><td>L</td><td>4-time speed playback</td></tr>
<tr><td>—</td><td>—</td><td>—</td></tr>
</table></td></tr>
<tr><td>15</td><td>PVDD3</td><td>Input</td><td>3.3V power supply terminal for PLL system.</td></tr>
<tr><td>16</td><td>PDO</td><td>Output</td><td>EFM signal/PLCK signal phase error signal output terminal.</td></tr>
<tr><td>17</td><td>TMAX</td><td>Output</td><td>TMAX detection result output terminal.
<table>
<tr><th>TMAX detection result</th><th>TMAX output</th></tr>
<tr><td>Longer than the specified period</td><td>"PVDD3"</td></tr>
<tr><td>Within the specified period</td><td>"Hi-z"</td></tr>
<tr><td>Shorter than the specified period</td><td>"AVSS3"</td></tr>
</table></td></tr>
<tr><td>18</td><td>LPFN</td><td>Input</td><td>Amp's inversion input terminal for PLL system low-pass filter.</td></tr>
<tr><td>19</td><td>LPFO</td><td>Output</td><td>Amp's output terminal for PLL system low-pass filter.</td></tr>
<tr><td>20</td><td>PVREF</td><td>Input</td><td>VREF terminal only for PLL system.</td></tr>
<tr><td>21</td><td>VCOF</td><td>Output</td><td>Filter terminal for VCO.</td></tr>
<tr><td>22</td><td>AVSS3</td><td>—</td><td>Analog GND terminal.</td></tr>
<tr><td>23</td><td>SLCO</td><td>Output</td><td>DAC output terminal for data slice level generation.</td></tr>
<tr><td>24</td><td>RFI</td><td>Input</td><td>RF signal input terminal. Zin can be selected by command.</td></tr>
<tr><td>25</td><td>AVDD3</td><td>Input</td><td>Analog 3.3V power supply terminal.</td></tr>
<tr><td>26</td><td>RFCT</td><td>Input</td><td>RFRP signal center level input terminal.</td></tr>
<tr><td>27</td><td>RFZI</td><td>Input</td><td>Input terminal for RFRP signal zero crossing.</td></tr>
<tr><td>28</td><td>RFRP</td><td>Input</td><td>RF ripple signal terminal.</td></tr>
<tr><td>29</td><td>FEI</td><td>Input</td><td>Focus error signal input terminal.</td></tr>
<tr><td>30</td><td>SBAD</td><td>Input</td><td>Sub-beam addition signal input terminal.</td></tr>
<tr><td>31</td><td>TEI</td><td>Input</td><td>Tracking error input terminal. Fetch when the tracking servo is on.</td></tr>
<tr><td>32</td><td>TEZI</td><td>Input</td><td>Input terminal for tracking error signal zero crossing.</td></tr>
<tr><td>33</td><td>FOO</td><td>Output</td><td>Focus equalizer output terminal.</td></tr>
<tr><td>34</td><td>TRO</td><td>Output</td><td>Tracking equalizer output terminal.</td></tr>
<tr><td>35</td><td>VREF</td><td>Input</td><td>Analog reference power supply terminal.</td></tr>
<tr><td>36</td><td>RFGC</td><td>Output</td><td>RF amplitude adjustment control signal output terminal.</td></tr>
<tr><td>37</td><td>TEBC</td><td>Output</td><td>Tracking balance control signal output terminal.</td></tr>
<tr><td>38</td><td>SEL</td><td>Output</td><td>APC circuit ON/OFF signal output terminal.
When the laser is on, UHS="L": "Hi-z", UHS="H": "H" output.</td></tr>
</table>

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC3 VHiTC9490F/-1: Servo/Signal Control (TC9490F) (2/2)

Pin No.	Terminal Name	Input/Output	Function
39	AVDD3	Input	Analog 3.3V power supply terminal.
40	FMO	Output	Feed equalizer output terminal.
41	DMO	Output	Disc equalizer output terminal.
42	VSS3	—	Digital GND terminal.
43	VDD3	Input	Digital 3.3V power supply terminal.
44	TESIN	Input	Test input terminal. Usually "L" fixed.
45	XVSS3	—	GND terminal for system clock oscillation circuit.
46	XI	Input	System clock oscillation circuit input terminal.
47	XO	Output	System clock oscillation circuit output terminal.
48	XVDD3	Input	3.3V power supply terminal for system clock oscillation circuit.
49	DVSS3	—	GND terminal for D/A converter.
50	RO	Output	R channel data normal rotation output terminal.
51	DVDD3	Input	3.3V power supply terminal for D/A converter.
52	DVR	—	Reference voltage terminal.
53	LO	Output	L channel data normal rotation output terminal.
54	DVSS3	—	D/A converter section GND terminal.
55*	ZDET	Output	1-bit D/A converter 0 detection flag output terminal.
56	VSS5	—	GND terminal for microcomputer interface.
57-60	BUS0-BUS3	Input/Output	Data input/output terminal for microcomputer interface.
61	BUCK	Input	Clock input terminal for microcomputer interface.
62	/CCE	Input	Chip enable signal input terminal for microcomputer interface. In case of "L", BUS3-0 are active.
63	/RST	Input	Reset signal input terminal. Reset: "L".
64	VDD5	Input	5V power supply terminal for microcomputer interface.

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

Note: AI/F: Analog input/output terminal
3-5I/F: Terminal with a built-in 3-5 interface (5V system input/output terminal)
3I/F: 3V system input/output terminal

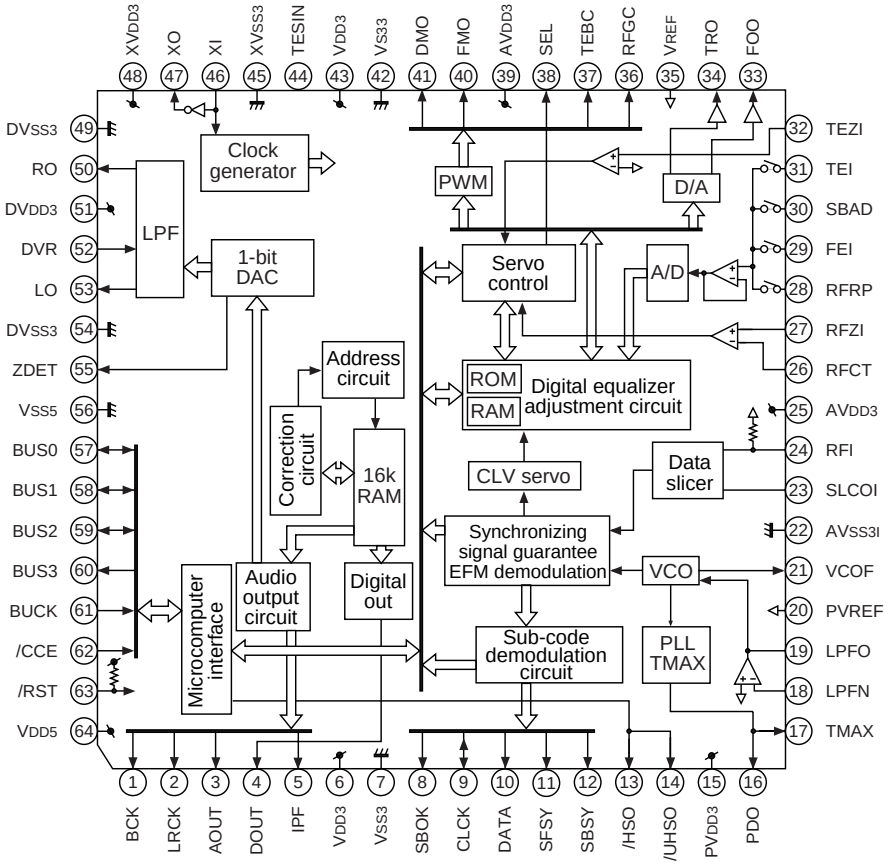


Figure 84 BLOCK DIAGRAM OF IC

ICU01 VHiLC75341M-1: Audio Processor (LC75341M)

Pin No.	Terminal Name	Function
1	DI	Serial data and clock input terminal for control.
2	CE	Chip enable terminal. When changing from "H" to "L", data is written in the internal latch and each analog switch is turned on. Data transmission is enabled at "H" level.
3	VSS	Ground terminal.
4	LOUT	Bass band filter construction capacitor/resistor connection terminal and bass/treble output terminal.
5	LBASS	Bass band filter capacitor and resistor connection terminal.
6	LTRE	Treble band filter capacitor connection terminal.
7	LIN	L-CH signal input terminal.
8	LSEL0	Input selector output terminal.
9-12 (11*)	L4-L1	Input signal terminal.
13-16 (14*)	R1-R4	Input signal terminal.
17	RSEL0	Input selector output terminal.
18	RIN	R-CH signal input terminal.
19	RTRE	Treble band filter capacitor connection terminal.
20	RBASS	Bass band filter capacitor and resistor connection terminal.
21	ROUT	Bass band filter capacitor/resistor connection terminal and bass/treble output terminal.
22	Vref	0.5 × VDD voltage generation section for analog ground. Connect a capacitor of 10μF or more between Vref and AVSS (VSS) as a countermeasure against the power supply ripple.
23	VDD	Power supply terminal.
24	CL	Serial data and clock input terminal for control.

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

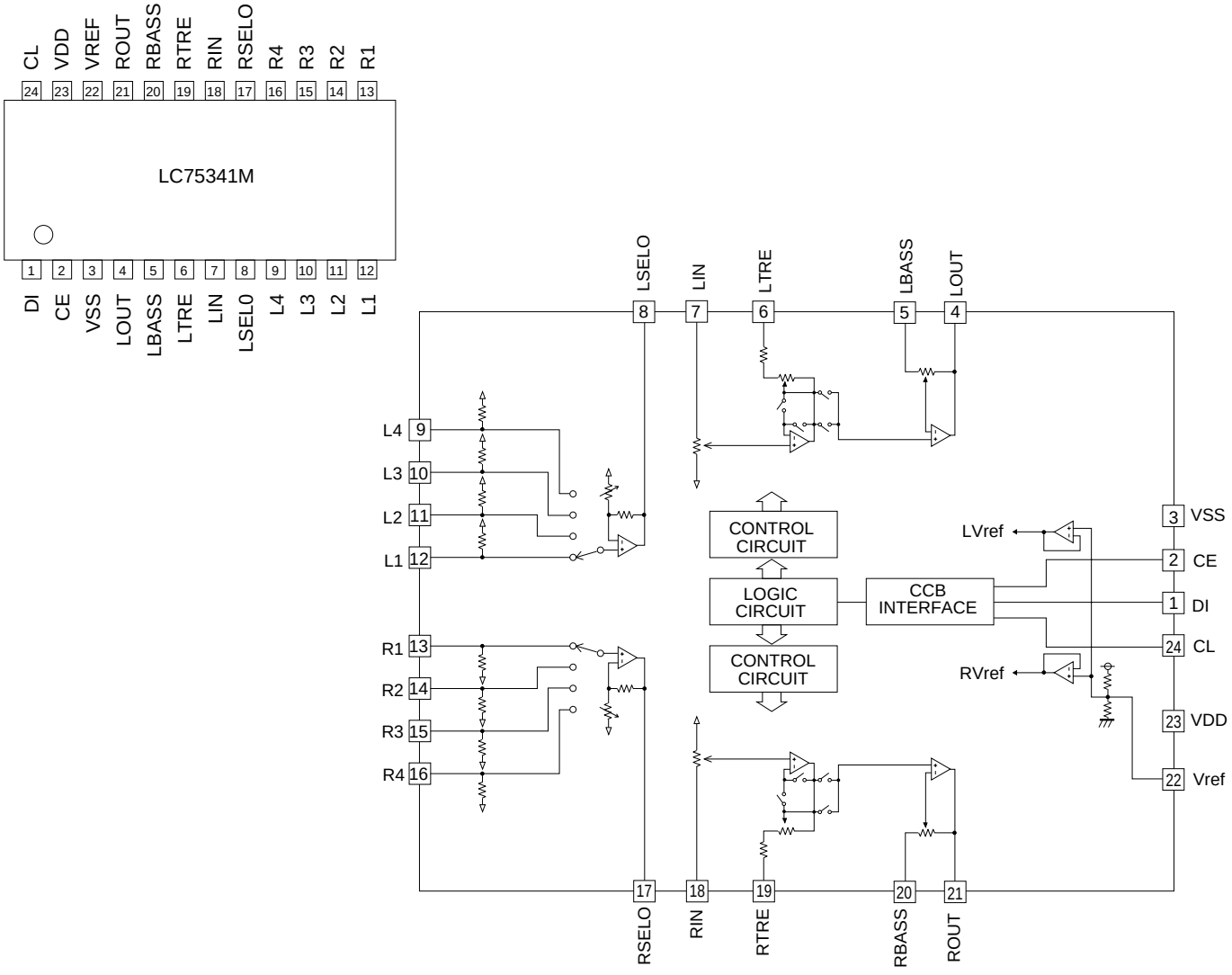


Figure 85 BLOCK DIAGRAM OF IC

ICA100 RH-iX2815AFZZ: 1 Bit AD Converter (IX2815AF)

Pin No.	Port Name	Input/Output	Function
1	VDDL	Input	L channel digital output section power terminal
2	OUTL (+)	Output	L channel forward output terminal
3	OUTL (–)	Output	L channel reverse output terminal
4	GNDD	—	Digital output section ground terminal
5	OUTR (–)	Output	R channel reverse output terminal
6	OUTR (+)	Output	R channel forward output terminal
7	VDDR	Input	R channel digital output section power terminal
8	VDDX	Input	Oscillation section power terminal
9	XI	Input	Quartz oscillator connection terminal. Clock necessary for the system is generated.
10	XO	Output	Quartz oscillator connection terminal. Clock necessary for the system is generated.
11	GNDX	—	Oscillation section ground terminal
12*	MCK	Output	System clock output terminal
13	TEST	Input	Test terminal. As usual, it is used at "L".
14	NFR1 (+)	Input	R channel forward signal feedback input terminal
15	NFR2 (–)	Input	R channel reverse signal feedback input terminal
16	GNDA	—	Analog ground terminal for AD converter
17	Rch IN	Input	R channel analog input terminal
18	Rch Vref	Input	Reference voltage terminal for R channel
19	Lch Vref	Input	Reference voltage terminal for L channel
20	Lch IN	Input	L channel analog input terminal
21	RESET	Input	Reset terminal. It is reset with "L".
22	NFL2 (–)	Input	L channel reverse signal feedback input terminal
23	NFL1 (+)	Input	L channel forward signal feedback input terminal
24	VDDA	Input	Analog current terminal for AD converter

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

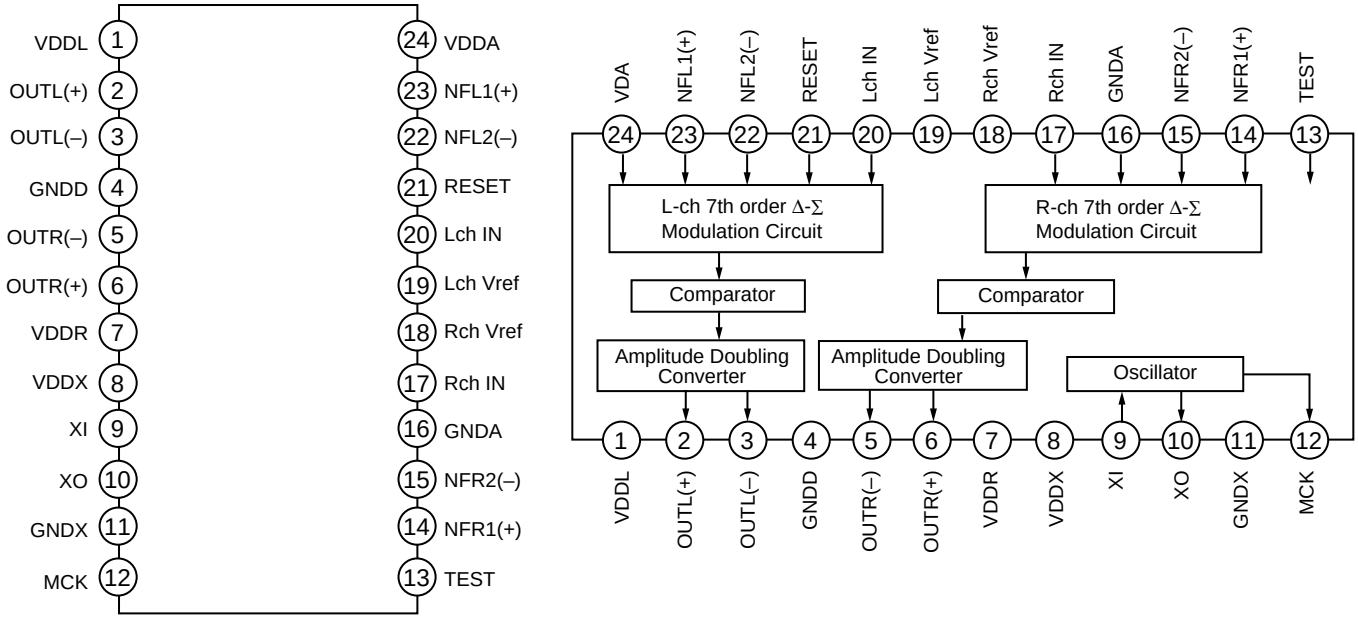


Figure 86 BLOCK DIAGRAM OF IC

ICD01 RH-iX0376AWZZ: System Microcomputer (IX0376AW) (1/2)

Pin No.	Terminal Name	Port Name	Input/Output	Remarks
1*	P77/AN7	_	Input (A/D Input)	"L" = Output fixed
2	P76/AN6	KEY1	Input (A/D Input)	A/D KEY input 1
3	P75/AN5	KEY2	Input (A/D Input)	A/D KEY input 2
4	P74/AN4	KEY3	Input (A/D Input)	A/D KEY input 3
5	P73/AN3	P-DWN	Output	Vref voltage cut when detecting a power failure at SYS STOP "H" = Normal state, "L" = Power failure
6	P72/AN2	TUNER_SM	Input (A/D Input)	Tuner tuning level detection. Output "L"
7	P71/AN0	PROTECT	Input (A/D Input)	Ignored for 500msec after detecting an error and turning the power ON.When the input voltage is 2.5V or below, the power is turned OFF.
8	P70/AN0	SPAN	Input (A/D Input)	"L" in input
9	PB3	POWER	Output	Control of connection/disconnection on the primary side of power supply. "H" = Connection, "L" = Disconnection
10	PB2/DA	H.P_SW	Input	Switch for headphone plug-in detection "H" = Headphone, "L" = Speaker
11	P57/SRDY3/AN15	CD_OP/CL_SENS	Input (A/D Input)	Turnover voltage detection when locking the CD lid 1.5V or below = CLOSE, 3.8V or more = OPEN
12	P56/SCLK3/AN14	P56	Input	"L" = Output fixed
13	P55/SOUT3/AN13	P55	Input	"L" = Output fixed
14	P54/SIN3/AN12	P54	Input	"L" = Output fixed
15	P53/SRDY2/AN11	MD_LOAD_SW	Input	MD LOAD SW detection. L -> H = DISC IN
16	P52/SCLK2/AN10	MD_ST	Output	1. Beginning of tracks on CD: 20Ms. H output 2. MD ON (RESET): 100mS. H output
17	P51/SOUT2/AN9	MD_SERACH	Output	CD PLAY: "L" (including CUE/REVIEW) Others: "H"
18	P50/SIN2/AN8	MD_RESET	Output	MD RESET output
19	P67/SRDY1/CS/SCLK12	MD_D_STB	Input	MD strobe input
20	P66/SCLK11	MD_D_SCK	Output	MD clock output
21	P65/SOUT1	MD_KDATA	Output	MD KEY data
22	P64/SIN1	MD_DATA	Input	MD data input
23	P63/CNTR1	CD_BUS3	Input/Output	Data input/output terminal for CD interface 3 "L" output fixed except CD function
24	P62/CNTR0	CD_BUS2	Input/Output	Data input/output terminal for CD interface 2 "L" output fixed except CD function
25	P61/PWM	CD_BUS1	Input/Output	Data input/output terminal for CD interface 1 "L" output fixed except CD function
26	P60	CD_BUS0	Input/Output	Data input/output terminal for CD interface 0 "L" output fixed except CD function
27	P47/T3OUT	CD_BUCK	Output	Clock output terminal for CD interface "L" output fixed except CD function
28	P46/T1OUT	CD_CCE	Output	Chip enable output terminal for CD interface "L" output fixed except CD function
29	P45/INT1/ZCR	P45	Input	Connected to GND
30*	P44/INT4	_	Input	"L" output fixed
31	P43/INT3	IC_CLK	Output	External control IC related clock SANYO C bus, input/output expander
32	P42/INT2	REMOCON_IN	Input	Remote control input
33	P41	IC_DI	Output	External control IC related DATA output SANYO C bus, input/output expander
34	P40/INT0	SYS_STOP	Input	Microcomputer backup detection "H" = Normal state, "H" -> "L" = Power failure detection
35	RESET	RESET	Input	Microcomputer reset terminal
36	PB1/XCIN	IC_CE	Output	External control IC related chip enable output SANYO CCB bus
37	PB0/XCOUT	IC_DO	Input	External control IC related DATA output SANYO CCB bus

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

ICD01 RH-iX0376AWZZ: System Microcomputer (IX0376AW) (2/2)

Pin No.	Terminal Name	Port Name	Input/Output	Remarks
38	XIN	X_IN	Input	Reference oscillation input. 8.38MHz crystal connection
39	XOUT	X_OUT	Output	Reference oscillation output. 8.38MHz crystal connection
40	VSS	VSS	—	Connected to GND
41	P27	IC_LCK2	Output	External control IC related latch clock output For input/output expander No.2
42	P26	CD_PU_IN	Input	CD pickup position detection “H” = Except “L”, “L” = CD pickup PUIN position
43	P25	DR_OP_IN	Input	CD door open detection switch “H” = Except “L”, “L” = CD door OPEN completed
44	P24	DR_CL_IN	Input	CD door close detection switch “H” = Except “L”, “L” = CD door CLOSE completed
45	P23/DIG19	IC_LCK1	Output	External control IC related latch clock output For input/output expander No.1
46	P22/DIG18	CD_RESET	Output	For input/output expander No.1 “H” -> “L”: RESET operation
47	P21/DIG17	TIMER_LED	Output	Timer stand-by LED output. On: “H”, Off: “L”
48	P20/DIG16	DIG1	Output	Digit output for FL No.1
49-56	P17/DIG15-P10/DIG08	DIG2-DIG9	Output	Digit output for FL No.2-No.9
57-60	P07/DIG07-P04/DIG04	DIG10-DIG13	Output	Digit output for FL No.10-No.13
61-64	P03/SEG35-P00/SEG32	SEG36-SEG33	Output	Segment output for FL No.36-No.33
65-72	P37/SEG31-P30/SEG24	SEG32-SEG25	Output	Segment output for FL No.32-No.25
73-80	P97/SEG23-P90/SEG16	SEG24-SEG17	Output	Segment output for FL No.24-No.17
81-88	P87/SEG15-P80/SEG08	SEG16-SEG9	Output	Segment output for FL No.16-No.9
89,90	PA7/SEG07,PA6/SEG06	SEG8,SEG7	Output	Segment output for FL No.8, No.7
91	VCC	VCC	Output	Power supply +5V
92-97	PA5/SEG05-PA0/SEG00	SEG6-SEG1	Output	Segment output for FL No.6-No.1
98	VEE	VEE	Input	Pull-down power supply for FL
99	AVSS	AVSS	—	A/D conversion section reference GND
100	VREF	VREF	Input	A/D conversion section reference power input +5V

ICD02/ICD03 VHiBU2092F/-1: Input/Output Expander (BU2092F)

Pin No.	Terminal Name	Port Name	Function
1	VSS	GND	GND
2	DATA	DI	Serial data input.
3	CLOCK	CLK	Data shift clock.
4	LCK	LCK1	Data latch clock.
5	Q0	LED_RED	Red of three-colored LED. "H"= OFF, "L"= ON
6	Q1	LED_GREEN	Green of three-colored LED. "H"= OFF, "L"= ON
7	Q2	LED_BLUE	Blue of three-colored LED. "H"= OFF, "L"= ON
8*	Q3	LED_SP	MD normal mode, Green. "H"= OFF, "L"= ON
9*	Q4	LED_LP2	MD 2 times mode, Blue. "H"= OFF, "L"= ON
10*	Q5	LED_LP4	MD 4 times mode, Orange: "H"= OFF, "L"= ON
11*	Q6	LED_MONO	MONO indication LED. "H"= OFF, "L"= ON
12	Q7	LED_AUX	AUX function indication LED. "H"= OFF, "L"= ON
13	Q8	LED_TUNER	TUNER function indication LED. "H"= OFF, "L"= ON
14	Q9	LED_CD	CD function indication LED. "H"= OFF, "L"= ON
15	Q10	LED_MD	MD function indication LED. "H"= OFF, "L"= ON
16*	Q11	LED_GROUP	Group indication LED. "H"= OFF, "L"= ON
17	$\overline{OE}$	GND	Output enable.
18	VDD	VDD	Power supply +5V

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

ICD01 RH-iX0376AWZZ: System Microcomputer (IX0376AW)

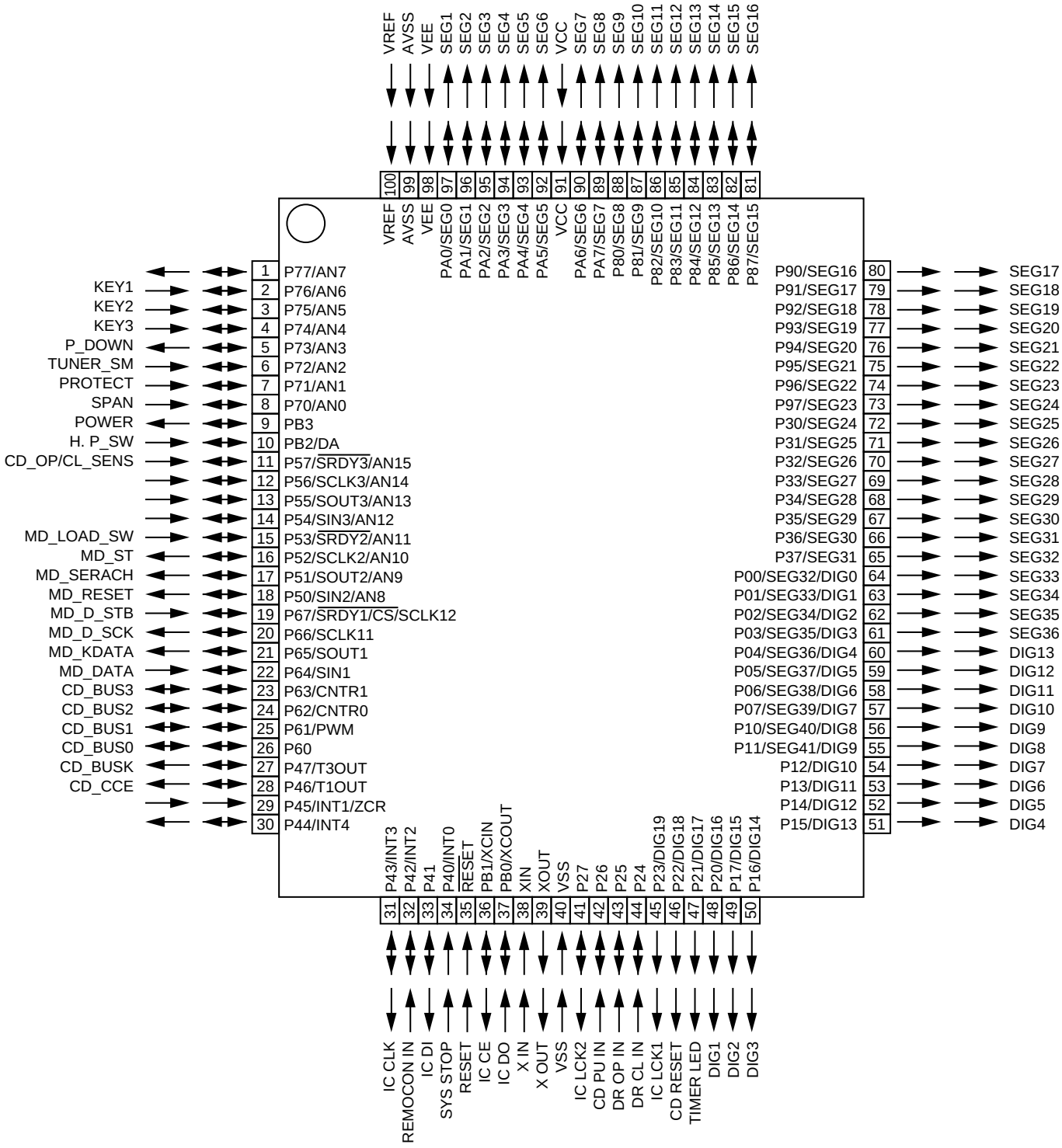
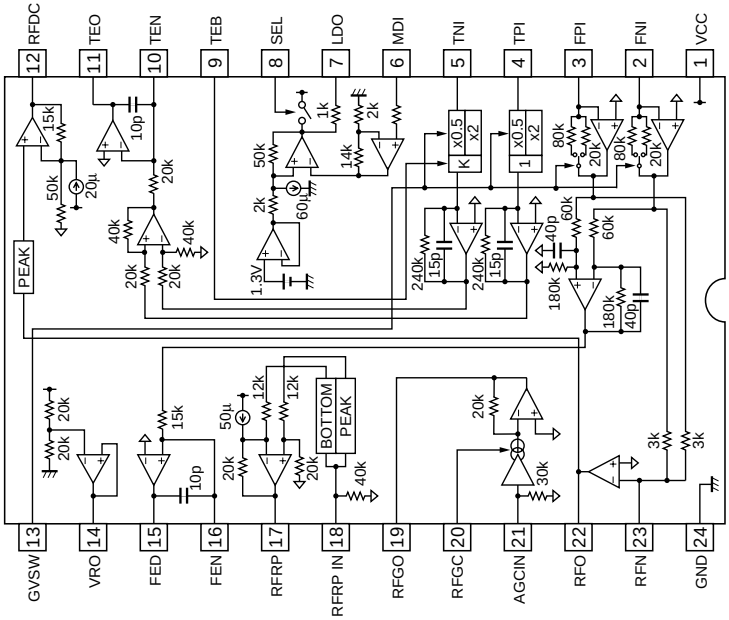


Figure 89 BLOCK DIAGRAM OF IC

IC2 VHiTA2147F/-1:Servo Pre Amp. (TA2147F)

Pin No.	Terminal Name	Input/Output	Function
1	VCC	—	3.3V power supply terminal
2	FNI	Input	Main beam amp input terminal
3	FPI	Input	Main beam amp input terminal
4	TPI	Input	Sub-beam amp input terminal
5	TNI	Input	Sub-beam amp input terminal
6	MDI	Input	Monitor photodiode amplifier input terminal
7	LDO	Output	Laser diode amp output terminal
8	SEL	Input	APC circuit ON/OFF signal, LDO terminal control input terminal and bottom/peak detection frequency switching terminal SEL / APC circuit / LDO GND / OFF / Connection to VCC via 1kΩ Hi-z / ON / Control signal output VCC / ON / Control signal output
9	TEBC	Input	Tracking error balance adjustment signal input terminal • TEBC input voltage
10	TEN	Input	Tracking error signal generation amp antiphase input terminal
11	TEO	Output	Tracking error signal generation amp output terminal
12	RFDC	Output	RF signal peak detection output terminal
13	GVSW	Input	AGC, FE, TE amp gain switching terminal GVSW / Mode GND / CD-RW Hi-z / CD-DA VCC / CD-CA
14	VRO	Output	Reference voltage (VRO) output terminal • VCC=3.3V: VRO=1/2 VCC
15	FEO	Output	Focus error signal generation amp output terminal
16	FEN	Input	Focus error signal generation amp antiphase input terminal
17	RFRP	Output	Signal generation amp output terminal for track count
18	RFRPIN	Input	Signal generation amp input terminal for track count
19	RFGO	Output	RF signal amplitude adjustment amp output terminal
20	RFGC	Input	RF amplitude adjustment control signal input terminal • RFGC input voltage
21	AGCIN	Input	RF signal amplitude adjustment amp input terminal
22	RFO	Output	RF signal generation amp output terminal
23	RFN	Input	RF signal generation amp input terminal
24	GND	—	GND terminal



PIN / VCTRL	SEL (APC_SW)	TEB (TE_BAL)	RFGC (AGC_Gain)	GVSW (CD/RW)
VCC	APC ON	-50%	+12dB	DA (0dB)
HiZ	APC ON	0%	+6dB	DA (0dB)
GND	APC OFF (LDO=H)	+50%	0dB	RW (+12dB)

Figure 90 BLOCK DIAGRAM OF IC

IC1 VHiLA6558++-1: Focus/Tracking/Spin/Sled Driver (LA6558)

Pin No.	Terminal Name	Function
1*	VO3-	CH3 (-) output
2*	VO3+	CH3 (+) output
3	VO5-	CH5 (-) output. Inversion against input
4	VO5+	CH5 (+) output. Non-inversion against input
5	VO4-	CH4 (-) output. Inversion against input
6	VO4+	CH4 (+) output. Non-inversion against input
7	P-GND	Power system GND (CH3, 4, 5)
8	S-GND	Signal system GND
9	VREF	Reference voltage input
10	IN-$\overline{\text{MUTE}}$	BTL AMP (CH1, 2, 4, 5) and 3.3V, 5VREG output. ON/OFF (“H”: Output ON, “L”: Output OFF)
11*	0-$\overline{\text{RESET}}$	Reset output (open collector)
12	VIN4	CH4 input
13	VIN5	CH5 input
14	VIN3+	CH3 input +
15	VIN3-	CH3 input –
16*	5VERG	5V power output
17	VIN6-	CH6 input –
18	VIN6+	CH6 input +
19	VIN2	CH2 input
20	VIN1	CH1 input
21	S-VCC	Signal system VCC
22	3.3VREG	3.3V power output
23	P-VCC	Power system power supply
24	P-GND2	Power system GND (CH1, 2, 6)
25	V01-	CH1 (-) output. Inversion against input
26	V01+	CH1 (+) output. Non-inversion against input
27	V02-	CH2 (-) output. Inversion against input
28	V01+	CH2 (+) output. Non-inversion against input
29	V06-	CH6 (-) output
20	V06+	CH6 (+) output

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

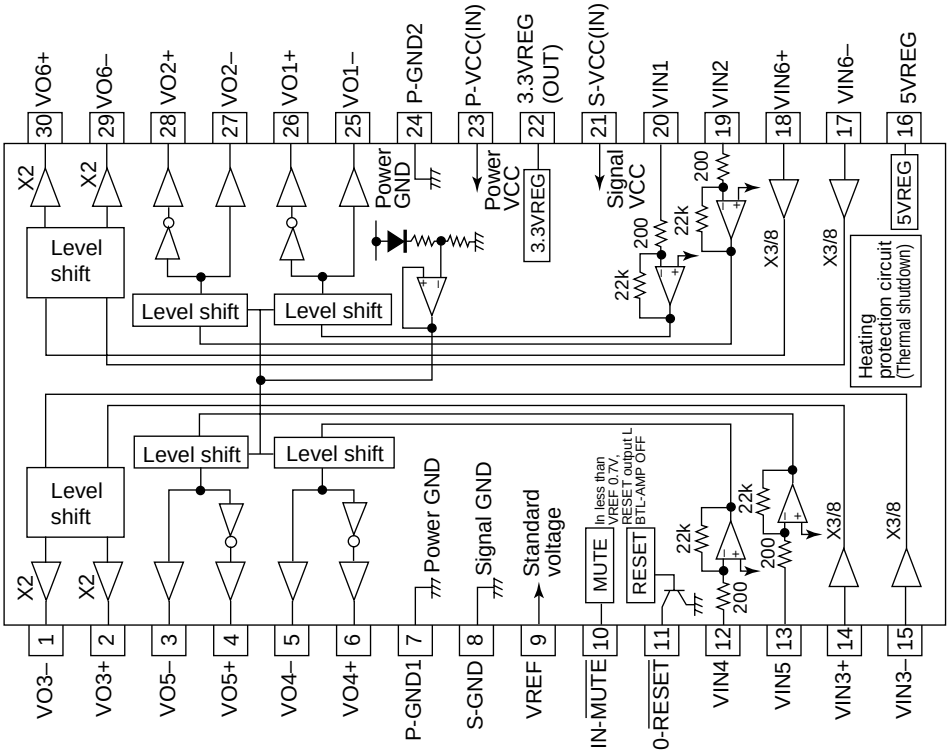


Figure 91 BLOCK DIAGRAM OF IC

ICT21 VHiLC72722/-1: RDS Decorder (LC72722)

Pin No.	Port Name	Input/Output	Function
1	VREF	Output	Reference voltage output (Vdda/2)
2	MPXIN	Input	Baseband (multiplexed0 signal input
3	VDDA	Input	Analog power supply (+5V)
4	VSSA	—	Analog ground
5	FLOUT	Output	Subcarrier output (fulter output)
6	CIN	Input	Subcarrier input (comparator input)
7	T1	Input	Test input (This pin must always be connected to ground.)
8	T2	Input	Test input (standby control) 0: Normal operation 1: standby state (crystal oscillator stopped)
9*	T3 (RDCL)	Input/Output (*)	Test I/O (RDS clock output)
10*	T4 (RDDA)	Input/Output (*)	Test I/O (RDS data output)
11*	T5 (RSFT)	Input/Output (*)	Test I/O (soft-decision control data output)
12	XOUT	Output	Crystal oscillator output (4.332/8.664 MHz)
13	XIN	Input	Crystal oscillator input (external reference signal input)
14	VDDD	Input	Digital power supply (+5V)
15	VSSD	—	Digital ground
16*	T6 (ERROR/57K/TP/BE1)	Input/Output (*)	Test I/O (error status, regenerated carrier, TP, error block count outputs)
17*	T7 (CORREC/ARI-ID/TA/BE0)	Input/Output (*)	Test I/O (error correction status, SK detection, TA, error block count outputs)
18*	SYNC	Input/Output (*)	Block synchronization detection output
19*	RDS-ID	Output	RDS detection output
20	DO	Output	Data output
21	CL	Input	Clock input — Serial data interface (CCB)
22	DI	Input	Data input — Serial data interface (CCB)
23	CE	Input	Chip enable — Serial data interface (CCB)
24	SYR	Input	Synchronization and RAM address reset (active high)

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.
(*): Normally the output pin. Used as an I/O pin in test mode, which is not available to user applications.

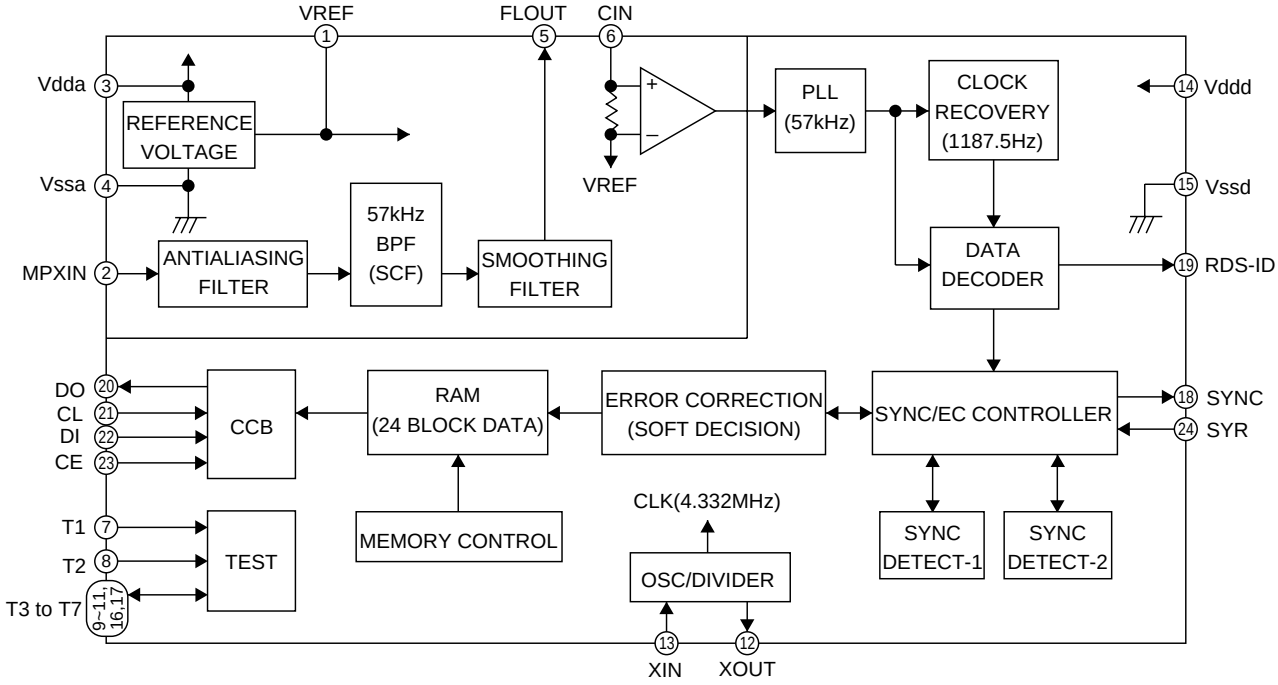


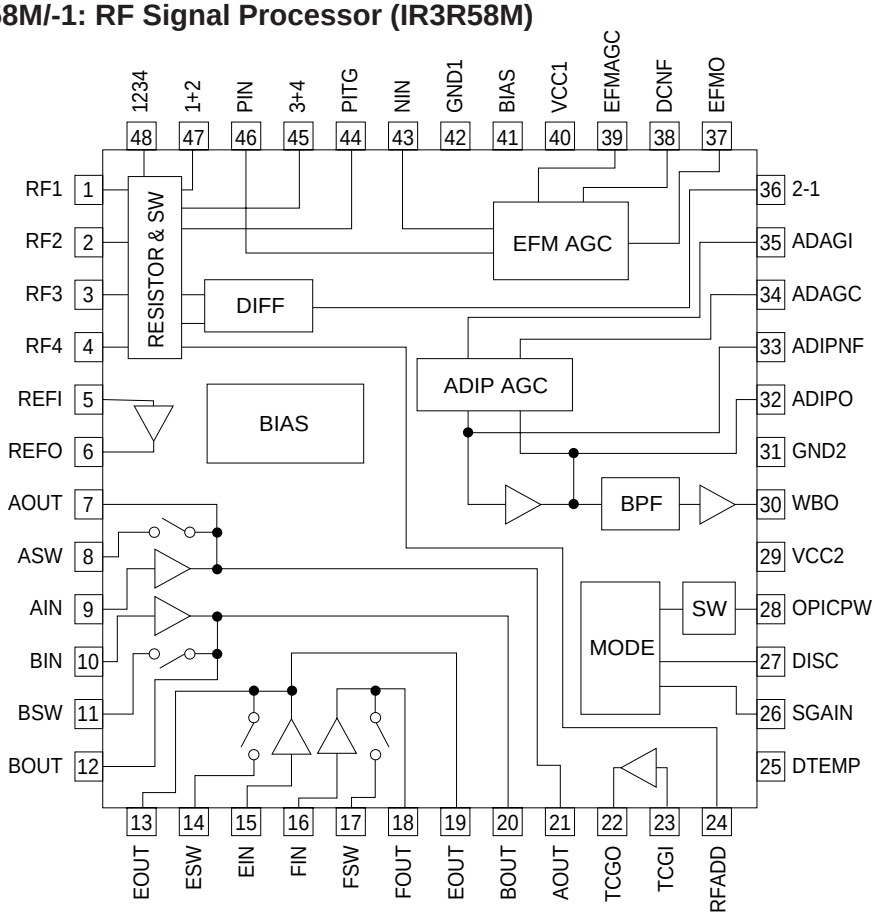
Figure 92 BLOCK DIAGRAM OF IC

IC1101 VHiiR3R58M/-1: RF Signal Processor (IR3R58M)

Pin No.	Terminal Name	Function
1	RF1	RF signal input terminal 1. Input of RF signal output of pickup
2	RF2	RF signal input terminal 2. Input of RF signal output of pickup
3	RF3	RF signal input terminal 3. Input of RF signal output of pickup
4	RF4	RF signal input terminal 4. Input of RF signal output of pickup
5	REFI	Reference voltage amplifier input terminal
6	REFO	Reference voltage amplifier output terminal
7	AOUT	Output terminal 1 of signal amplifier for servo (focus servo system)
8	ASW	Output terminal 2 of signal amplifier for servo (focus servo system)
9	AIN	Reverse input terminal of signal amplifier for servo (focus servo system)
10	BIN	Reverse input terminal of signal amplifier for servo (focus servo system)
11	BSW	Output terminal 2 of signal amplifier for servo (focus servo system)
12	BOUT	Output terminal 1 of signal amplifier for servo (focus servo system)
13	EOUT	Output terminal 1 of signal amplifier for servo (tracking servo system)
14	ESW	Output terminal 2 of signal amplifier for servo (tracking servo system)
15	EIN	Reverse input terminal of signal amplifier for servo (tracking servo system)
16	FIN	Reverse input terminal of signal amplifier for servo (tracking servo system)
17	FSW	Output terminal 2 of signal amplifier for servo (tracking servo system)
18	FOUT	Output terminal 1 of signal amplifier for servo (tracking servo system)
19	EOUT	Output terminal 1 of signal amplifier for servo (tracking servo system)
20	BOUT	Output terminal 1 of signal amplifier for servo (focus servo system)
21	AOUT	Output terminal 1 of signal amplifier for servo (focus servo system)
22	TCGO	Group mode: Track cross detection signal amplifier output terminal
23	TCGI	Group mode: Track cross detection signal amplifier input terminal
24	RFADD	Resistance addition output terminal of RF1 - RF4
25	DTEMP	Chip temperature detection terminal
26	SGAIN	Switch section control terminal of amplifier for servo
27	DISC	Pit mode, groove mode selecting control terminal
28*	OPICPW	Power output terminal for OPIC
29	VCC2	Power supply terminal of digital section and power section
30*	WBO	Comparator output terminal for binary coded ADIP signal
31	GND2	GND terminal of digital section and power section
32	ADIPO	ADIP signal preamplifier output terminal
33*	ADIPNF	ADIP signal AGC amplifier output terminal
34	ADAGC	Smoothing capacitor connection terminal for ADIP signal AGC
35	ADAGI	ADIP signal AGC amplifier input terminal
36	2-1	Differential signal of RF1, RF2
37	EFMO	RF signal AGC amplifier output terminal
38	DCNF	Smoothing capacitor connection terminal for RF signal AGC amplifier reference voltage
39	EFMAGC	Smoothing capacitor connection terminal for RF signal AGC
40	VCC1	Analog section power supply terminal
41	BIAS	Bias input terminal
42	GND1	Analog section GND terminal
43	NIN	RF signal AGC amplifier reverse input terminal
44	PITG	Pit mode: Ground terminal
45	3 + 4	Groove mode: Resistance addition output terminal of RF3 and RF4
46	PIN	RF signal AGC amplifier non-reverse input terminal
47	1 + 2	Groove mode: Resistance addition output terminal of RF1 and RF2
48	1234	Pit mode: Resistance addition output terminal of RF1 - RF4

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC1101 VHiiR3R58M/-1: RF Signal Processor (IR3R58M)



IC1201 VHiLR37816A-1: Endec/Atrac (LR37816A)

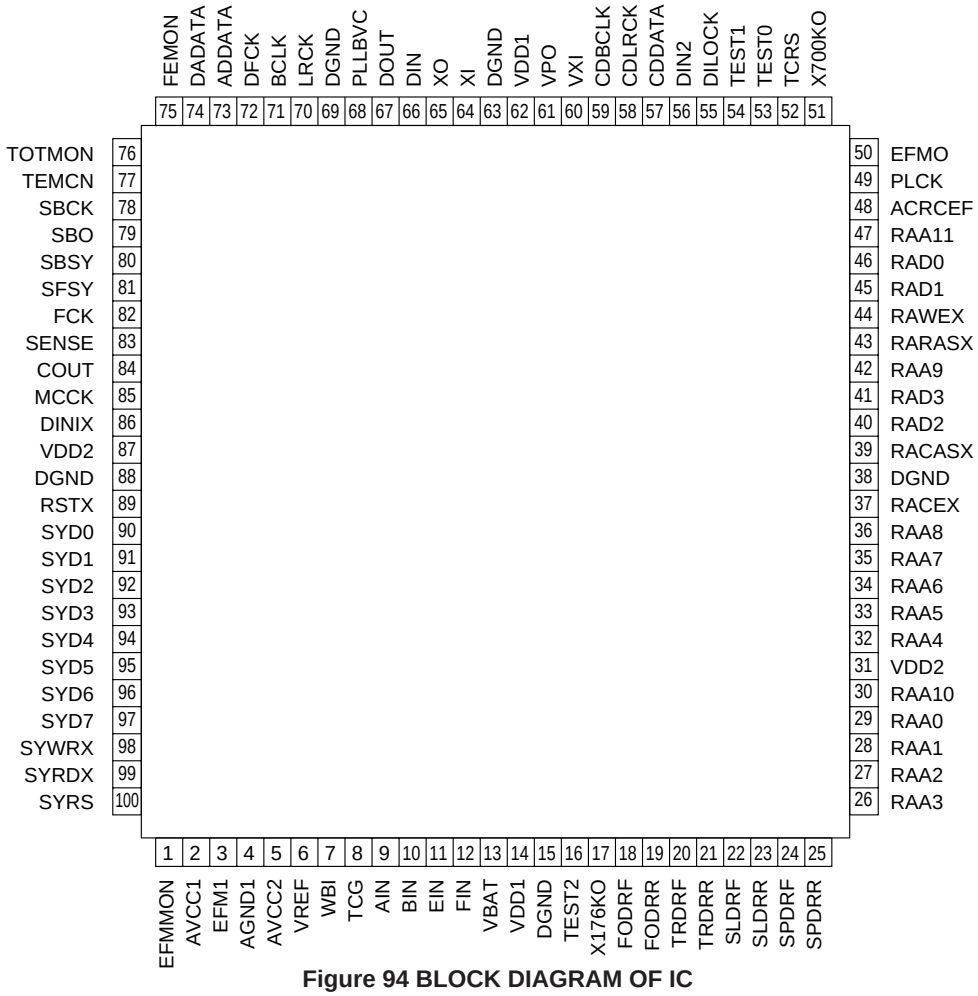


Figure 94 BLOCK DIAGRAM OF IC

IC1201 VHiLR37816A-1: Endec/Atrac (LR37816A) (1/2)

Pin No.	Terminal Name	Input/Output	Function
1*	EFMMON	Output	EFM monitor output
2	AVCC1	Input	Analog power supply (for EFM system 8AD, 8DA)
3	EFMI	Input	EFM signal input from RF amplifier
4	AGND1	—	Analog GND
5	AVCC2	Input	Analog power supply (for servo system, ADIP system 1bit AD)
6	VREF	Input	Reference voltage input for RF amplifier
7	WBI	Input	ADIP wobble signal
8	TCG	Input	Track cross signal
9	AIN	Input	Focus error signal A
10	BIN	Input	Focus error signal B
11	EIN	Input	Tracking error signal E
12	FIN	Input	Tracking error signal F
13	VBAT	Input	Power voltage detection signal for constant voltage servo
14	VDD1	Input	Internal digital power supply
15	DGND	—	Digital GND
16	TEST2	Input	Input for test. Connected to GND if used normally
17*	X176KO	Output	Clock output. f=176.4kHz (4fs)
18*	FODRF	Output	Focus servo forward output. PWM.
19	FODRR	Output	Focus servo reverse output. PWM.
20*	TRDRF	Output	Tracking servo forward output. PWM.
21	TRDRR	Output	Tracking servo reverse output. PWM.
22*	SLDRF	Output	Slide servo forward output. PWM.
23	SLDRR	Output	Slide servo reverse output. PWM.
24*	SPDRF	Output	Spindle servo forward output. PWM.
25	SPDRR	Output	Spindle servo reverse output.
26	RAA3	Output	Address output to external D-RAM. ADR3
27	RAA2	Output	Address output to external D-RAM. ADR2
28	RAA1	Output	Address output to external D-RAM. ADR1
29	RAA0	Output	Address output to external D-RAM. ADR0 (LSB)
30*	RAA10	Output	Address output to external D-RAM. ADR10 (MSB)
31	VDD2	Input	Power supply for interface
32	RAA4	Output	Address output to external D-RAM. ADR4
33	RAA5	Output	Address output to external D-RAM. ADR5
34	RAA6	Output	Address output to external D-RAM. ADR6
35	RAA7	Output	Address output to external D-RAM. ADR7
36	RAA8	Output	Address output to external D-RAM. ADR8
37	RAOEX	Output	Data output enable signal output to external D-RAM
38	DGND	—	Digital GND
39	RACASX	Output	Column address strobe signal output to external D-RAM
40	RAD2	Input/Output	Data input and output with external D-RAM. D2
41	RAD3	Input/Output	Data input and output with external D-RAM. D3 (MSB)
42	RAA9	Output	Address output to external D-RAM. ADR9
43	RARASX	Output	Low address strobe signal output to external D-RAM
44	RAWEX	Output	Data write enable signal output to external D-RAM
45	RAD1	Input/Output	Data input and output with external D-RAM. D1
46	RAD0	Input/Output	Data input and output with external D-RAM. D0 (LSB)
47*	RAA11	Output	Address output to external D-RAM. ADR11 (MSB 64 Mbit)
48*	ACRCER	Output	CRC error flag monitor output of ADIP
49*	PLCK	Output	Playback mode: EFM PLL clock output
50	EFM0	Output	Recording mode: EFM signal output. Playback mode: C1F (C1 error flag) monitor output.
51*	X700KO	Output	Clock output. f=705.6kHz

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC1201 VHiLR37816A-1: Endec/Atrac (LR37816A) (2/2)

Pin No.	Terminal Name	Input/Output	Function
52*	TCRS	Output	Track cross signal
53	TEST0	Input	Input for test. Connected to GND if used normally.
54	TEST1	Input	Input for test. Connected to GND if used normally.
55	DILOCK	Output	DIN lock detection
56	DIN2	Input/Output	Digital input signal. Expansion port 0.
57	CDDATA	Input/Output	Data input for dubbing. Expansion output port 1.
58	CDLRCK	Input/Output	LR clock input for dubbing. Expansion output port 2.
59	CDBCLK	Input/Output	Bit clock input for dubbing. Expansion output port 3.
60	VXI	Input	PLL clock input for variable pitch
61*	VPO	Output	PLL phase error output for variable pitch
62	VDD1	Input	Internal digital power supply
63	DGND	—	Digital GND
64	XI	Input	Transmit circuit input. 33.8688MHz
65	XO	Output	Transmit circuit input. 33.8688MHz
66	DIN	Input	Digital input signal
67	DOUT	Output	Digital output signal
68	PLLBVG	Output	For Internal PLL. Terminal for external capacitor
69	DGND	—	Digital GND
70	LRCK	Output	L-ch, R-ch selection output of music data
71	BCLK	Output	Shift lock of music data
72	DFCK	Output	Clock for AD/DA converter digital filter. 256Fs.
73	ADDATA	Input	Sound data input.
74	DADATA	Output	Sound data output.
75*	FEMON	Output	Focus error signal monitor output. Series resistance 10 - 100kΩ built-in
76*	TOTMON	Output	Total signal monitor output. Series resistance 10 - 100kΩ built-in
77*	TEMON	Output	Tracking error signal monitor output. Series resistance 10 - 100kΩ built-in
78	SBCK	Input/Output	DIN subcode read clock. Expansion port 4.
79	SBO	Output	DIN subcode serial data. Expansion port 5.
80	SBSY	Output	DIN subcode block synchronous signal. Expansion port 6.
81	SFSY	Output	DIN subcode frame synchronous signal. Expansion port 7.
82	FOK	Output	Focus OK detection signal. “0”: focus OK
83	SENSE	Output	Servo condition detection signal
84	COUT	Output	Track cross signal output
85	MCCK	Output	Clock output for microcomputer
86	DINTX	Output	Interrupt request output terminal to system computer interface
87	VDD2	Input	Power supply for interface
88	DGND	—	Digital GND
89	RSTX	Input	Chip reset input. Reset by L. (Note)
90	SYD0	Input/Output	Data bus terminal of system computer interface (LSB)
91-96	SYD1-SYD6	Input/Output	Data bus terminal of system computer interface
97	SYD7	Input/Output	Data bus terminal of system computer interface (MSB)
98	SYWRX	Input	Resister write pulse input of system computer interface
99	SYRDX	Input	Resister read pulse input of system computer interface
100	SYRS	Input	Resister selection input of system computer interface

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

Note: Set RSTX to L when turning on the power or after turning on the power.

IC1202 RH-iX2474AFZZ: 4Mbit D-RAM (IX2474AF)

Pin No.	Terminal Name	Function
1, 2	DQ0, DQ1	Data input/Data output
3	$\overline{WE}$	Write enable
4	$\overline{RAS}$	Row address storobe
5	A9	Address input
6-9	A0-A3	Address input
10	VDD	Power (3.3V)
11-15	A4-A8	Address input
16	$\overline{OE}$	Output enable
17	$\overline{CAS}$	Column address storobe
18, 19	DQ2, DQ3	Data input/Data output
20	VSS	Ground (0V)

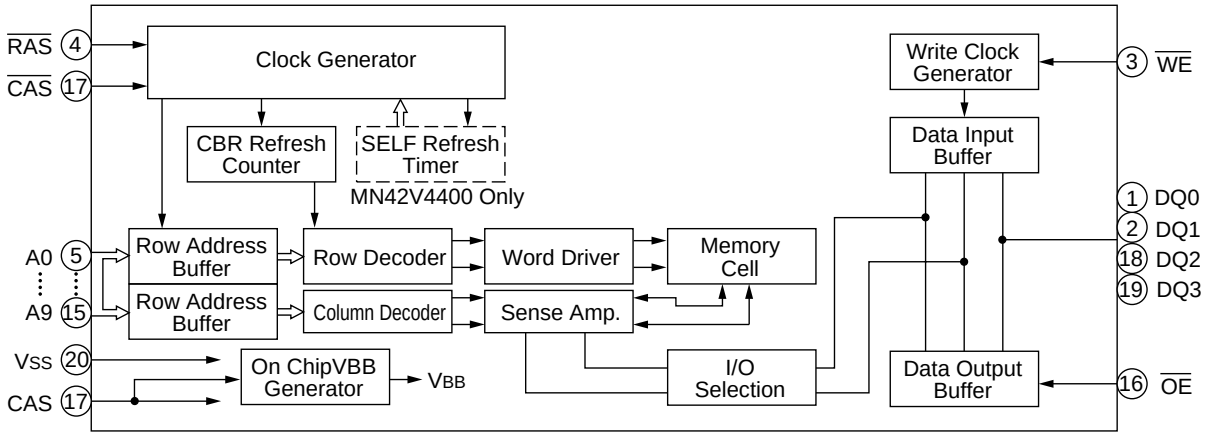


Figure 97-1 BLOCK DIAGRAM OF IC

IC1301 VHiFTD2005/-1: Head Driver (FTD2005)

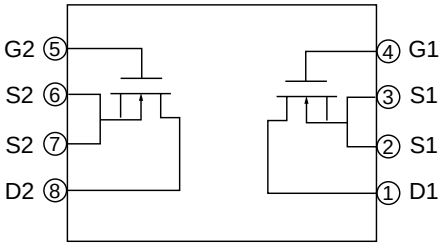


Figure 97-2 BLOCK DIAGRAM OF IC

IC1302 VHiCPH5608/-1: Head Driver (CPH5608)

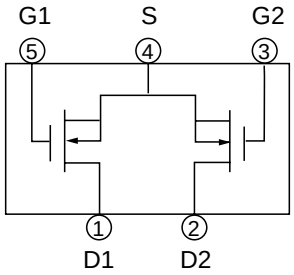


Figure 97-3 BLOCK DIAGRAM OF IC

IC1402 VHi58X2402T-1: EEPROM (58X2402T)

Pin No.	Terminal Name	Function
1-3	A0-A2	Device address
4	VSS	Ground
5	SDA	Serial data input/output
6	SCL	Serial clock input
7	WP	Write protect
8	VCC	Power supply

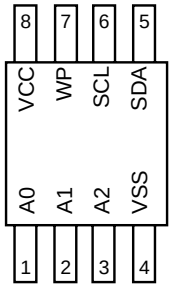


Figure 97-4 BLOCK DIAGRAM OF IC

IC1401 RH-iX0410AWZZ: MD System Microcomputer (IX0410AW) (1/2)

Pin No.	Terminal Name	Input/Output	Function
1	4M/16M	Input	4M/16M DRAM selection input
2	64M	Input	64M DRAM selection input
3	LDVAR	Output	LDVAR (laser power adjustment output)
4*	ADJS	Output	ADJS (for automatic adjustment step check)
5	CIN	Input	CIN (track count signal input)
6*	NC	– (Output)	Not used
7	UNLOCK	Input	ERR input (UNLOCK of MD LSI monitor PLL)
8	BYTE	Input	GND
9	CNVss	Input	GND
10*	STID OUT	Output	ST-ID output
11*	SEACH OUT	Output	MD search output
12	RESET	Input	RESET input
13*	NC	Input	Clock output
14	Vss	–	GND
15	MCCK	Input	EXTAL (8.4672MHz)
16	Vcc	Input	+3.15V
17	P85	Input	Input output port P85
18	DINT	Input	DINT (Interrupt input from MD-LSI)
19	SFSY	Input	Subcode communication frame synchro Interrupt input
20	ST-ID	Input	ST-ID input (MD-ON)
21	SERCH	Input	CD search input (Synchronous REC interrupt input)
22	MDRMUT	Output	MD RMUT output (MOTOR DRIVER MUTE)
23*	NC	Output	Not used
24	DSENSE	Input	DSENSE (servo sense input from MD-LSI)
25	P-DOWN	Input	P-DOWN (blackout detection)
26	HD ON	Output	HDON (magnetic head power ON/OFF output)
27	EEPRO	Output	EEPROM protect release output
28	HFON	Output	HFON
29	EEPK	Output	EEPROM serial clock output
30	EEPD	Input/Output	EEPROM data input output
31	MD DATA	Output	MD computer data input output
32	K DATA	Input	System computer data input
33	DSCK	Input	System computer clock input
34	DSTB	Output	DSTB (system computer communication possible and during communication)
35*	NC	Output	Not used
36	SBO	Input	Subcode serial data input
37	SBCK	Output	Subcode communication serial clock output
38	DISC	Output	DISC
39	R/P	Output	R/P output (REC/PLAY selection)
40	FOK	Input	FOK (focus servo condition monitor input)
41	FLASH L	Input	Flash write selection
42	SGAIN	Output	SGAIN
43	SYRS	Output	MD LSI resister select signal output
44	SYRD	Output	SYRD (MD-LSI read signal output)
45	SYWR	Output	SYWR (MD-LSI write signal output)
46	FLASH H	Input	Flash write selection
47	SYS D7	Input/Output	SYS D7 (data bus 7)
48	SYS D6	Input/Output	SYS D6 (data bus 6)
49	SYS D5	Input/Output	SYS D5 (data bus 5)
50	SYS D4	Input/Output	SYS D4 (data bus 4)
51	SYS D3	Input/Output	SYS D3 (data bus 3)

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC1401 RH-iX0410AWZZ: MD System Microcomputer (IX0410AW) (2/2)

Pin No.	Terminal Name	Input/Output	Function
52	SYS D2	Input/Output	SYS D2 (data bus 2)
53	SYS D1	Input/Output	SYS D1 (data bus 1)
54	SYS D0	Input/Output	SYS D0 (data bus 0)
55*	P37	Output	Input output port P37
56*	P36	Output	Input/output port P36
57*	P35	Output	Input/output port P35
58*	P34	Output	Input/output port P34
59*	P33	Output	Input/output port P33
60*	P32	Output	Input/output port P32
61	P31	Input	Input/output port P31
62	Vcc	Input	+3.15V
63	INNSW	Input	Pick most inner periphery detection input
64	GND	–	GND
65	L3 DATA	Output	L3 DATA (soft serial communication, 2 mode presence, LSB first)
66	L3 MODE	Output	L3 MODE (soft serial communication, 2 mode presence, LSB first)
67	L3 CLK	Output	L3 CLK (soft serial communication, 2 mode presence, LSB first)
68*	P24	Output	Input output port P24
69*	P23	Output	Input output port P23
70	PCNT0	Output	PCNT0 output
71*	LAST	Output	LAST
72	LD ON	Output	LDON output (H : ON)
73	A/B	Input	ANLPTR output. ADC/DAC selection input.
74	SBSY	Input	Subcode communication block synchro input.
75*	DAP ON	Output	DAPON output (for CK)
76*	DFS0	Output	DFS0 output
77*	DFS1	Output	DFS1 output
78	P12	Input	Input output port P12
79	P11	Input	Input/output port P11
80	XRST	Output	XRST (system reset output)
81*	AD MUTE	Output	ADMUTE output (for CK)
82	LD+	Output	Loading motor + side control output
83	LD-	Output	Loading motor - side control output
84*	MUTE	Output	MUTE output
85*	RAST	Output	RAST
86*	TEST2	Input	TEST 2
87*	TEST1	Input	TEST 1
88*	TEST0	Input	TEST 0
89	AVCK3	Input	AVCK3 (motor driver power monitor input)
90	AVCK2	Input	AVCK2 (AD/DA section 3.1 V monitor input)
91	AVCK1	Input	AVCK1 (head circuit power monitor input)
92	DTEMP	Input	DTEMP (temperature detection input)
93	MINF	Input	MINF (disc type/REC input/mecha position)
94*	TEST K1	Input	TEST K1
95*	TEST K2	Input	TEST K2
96	GND	–	GND
97*	NC	–	Not used
98	VREF	Input	+3.15V
99	AVcc	Input	+3.15V
100	PR	Input	Playback/recording unit setting input

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC1701 VHiUDA1345/-1: AD/DA Converter (UDA1345)

Pin No.	Terminal Name	Function
1	VSSA(ADC)	AD converter analog ground
2	VDDA(ADC)	AD converter analog power
3	VINL	AD converter input (left)
4	Vref(A)	AD converter reference voltage
5	VINR	AD converter input (right)
6	VADCN	AD converter reference voltage N
7	VADCP	AD converter reference voltage P
8*	MC1	Mode control 1 (Pulled-down)
9*	MP1	Multi-purpose pin 1
10	VDDD	Digital power
11	VSSD	Digital ground
12	SYSCLK	System clock 256fs, 384fs, 512fs
13	MP2	Multi-purpose pin 2
14	MP3	Multi-purpose pin 3
15	MP4	Multi-purpose pin 4
16	BCK	Bit clock input
17	WS	Word select input
18	DATAO	Data output
19	DATAI	Data input
20*	MP5	Multi-purpose pin 5 (Pulled-down)
21*	MC2	Mode control 2 (Pulled-down)
22	VSSA(DAC)	DA converter analog ground
23	VDDA(ADC)	DA converter analog power
24	VOUTR	DA converter output (right)
25	VDDO	Opeamp power
26	VOUTL	DA converter output (left)
27	VSSO	Opeamp ground
28	Vref(D)	AD converter reference voltage

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

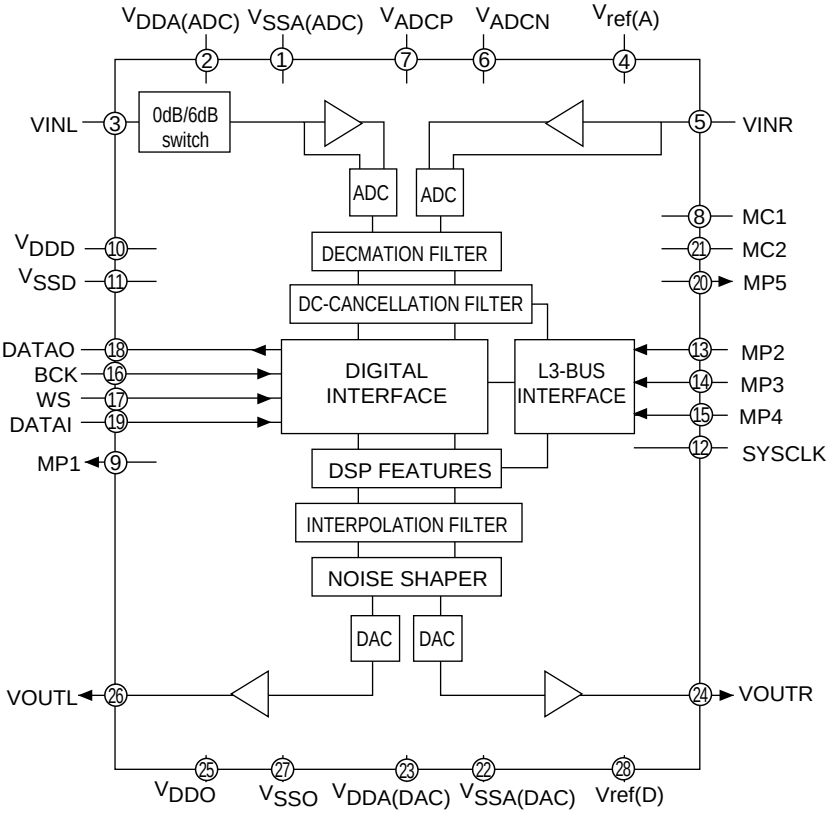
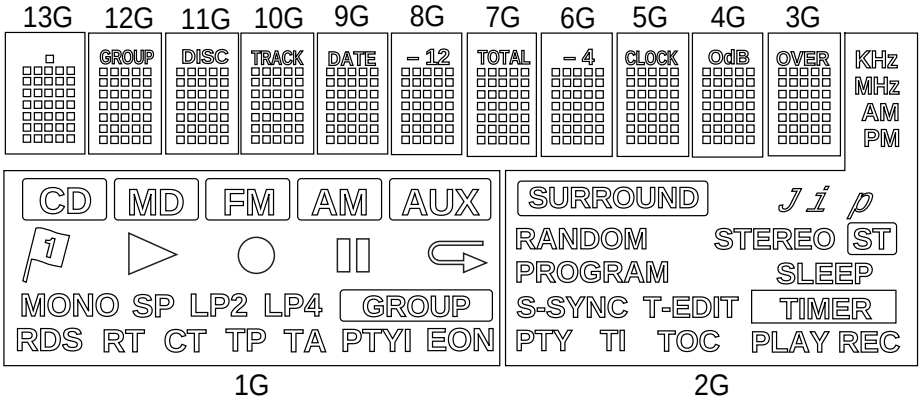


Figure 100 BLOCK DIAGRAM OF IC

FL DISPLAY

FLD01: VVKHNA13LS3-1



1-1	1-2	1-3	1-4	1-5
2-1	2-2	2-3	2-4	2-5
3-1	3-2	3-3	3-4	3-5
4-1	4-2	4-3	4-4	4-5
5-1	5-2	5-3	5-4	5-5
6-1	6-2	6-3	6-4	6-5
7-1	7-2	7-3	7-4	7-5

(3G – 13G)

CONNECTION

PIN No.	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40
CONNECTION	F2	NP	F2	NP	NP	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G	13G	P36	P35

PIN No.	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20
CONNECTION	P34	P33	P32	P31	P30	P29	P28	P27	P26	P25	P24	P23	P22	P21	P20	P19	P18	P17	P16	P15

PIN No.	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	P14	P13	P12	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2	P1	NP	NP	F1	NP	F1

ANODE CONNECTION

	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G	13G
P1	–	–	OVER	OdB	CLOCK	– 4	TOTAL	–12	DATE	TRACK	DISC	GROUP	□
P2	–	–	1–1	1–1	1–1	1–1	1–1	1–1	1–1	1–1	1–1	1–1	1–1
P3	–	–	1–2	1–2	1–2	1–2	1–2	1–2	1–2	1–2	1–2	1–2	1–2
P4	–	–	1–3	1–3	1–3	1–3	1–3	1–3	1–3	1–3	1–3	1–3	1–3
P5	–	–	1–4	1–4	1–4	1–4	1–4	1–4	1–4	1–4	1–4	1–4	1–4
P6	–	–	1–5	1–5	1–5	1–5	1–5	1–5	1–5	1–5	1–5	1–5	1–5
P7	–	–	2–1	2–1	2–1	2–1	2–1	2–1	2–1	2–1	2–1	2–1	2–1
P8	–	–	2–2	2–2	2–2	2–2	2–2	2–2	2–2	2–2	2–2	2–2	2–2
P9	–	–	2–3	2–3	2–3	2–3	2–3	2–3	2–3	2–3	2–3	2–3	2–3
P10	–	–	2–4	2–4	2–4	2–4	2–4	2–4	2–4	2–4	2–4	2–4	2–4
P11	–	–	2–5	2–5	2–5	2–5	2–5	2–5	2–5	2–5	2–5	2–5	2–5
P12	–	–	3–1	3–1	3–1	3–1	3–1	3–1	3–1	3–1	3–1	3–1	3–1
P13	–	–	3–2	3–2	3–2	3–2	3–2	3–2	3–2	3–2	3–2	3–2	3–2
P14	–	–	3–3	3–3	3–3	3–3	3–3	3–3	3–3	3–3	3–3	3–3	3–3
P15	RDS	–	3–4	3–4	3–4	3–4	3–4	3–4	3–4	3–4	3–4	3–4	3–4
P16	RT	–	3–5	3–5	3–5	3–5	3–5	3–5	3–5	3–5	3–5	3–5	3–5
P17	CT	kHz	4–1	4–1	4–1	4–1	4–1	4–1	4–1	4–1	4–1	4–1	4–1
P18	TP	MHz	4–2	4–2	4–2	4–2	4–2	4–2	4–2	4–2	4–2	4–2	4–2
P19	TA	AM	4–3	4–3	4–3	4–3	4–3	4–3	4–3	4–3	4–3	4–3	4–3
P20	PTYI	PM	4–4	4–4	4–4	4–4	4–4	4–4	4–4	4–4	4–4	4–4	4–4
P21	EON	PTY	4–5	4–5	4–5	4–5	4–5	4–5	4–5	4–5	4–5	4–5	4–5

	1G	2G	3G – 13G
P22	GROUP	TI	5–1
P23	LP4	TOC	5–2
P24	LP2	PLAY	5–3
P25	SP	REC	5–4
P26	MONO	S-SYNC	5–5
P27	1	T-EDT	6–1
P28	▷	TIMER	6–2
P29	○	PROGRAM	6–3
P30	II	SLEEP	6–4
P31	⇨	RANDOM	6–5
P32	CD	STEREO	7–1
P33	MD	ST	7–2
P34	FM	SURROUND	7–3
P35	AM	J i	7–4
P36	AUX	p	7–5

— M E M O —

SHARP PARTS GUIDE

1-BIT DIGITAL AUDIO SYSTEM

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MODEL SD-CX1H(GR)

SD-CX1H 1-Bit Digital Audio System consisting of SD-CX1H (main unit) and CP-CX1H (speaker system).

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Explanation of capacitors/resistors parts codes

Capacitors

VCC ..... Ceramic type
VCK..... Ceramic type
VCT ..... Semiconductor type
VC • • MF ..... Cylindrical type (without lead wire)
VC • • MN..... Cylindrical type (without lead wire)
VC • • TV ..... Square type (without lead wire)
VC • • TQ ..... Square type (without lead wire)
VC • • CY ..... Square type (without lead wire)
VC • • CZ ..... Square type (without lead wire)
VC • • • • • • • • • J .. The 13th character represents capacity difference.
("J" ±5%, "K" ±10%, "M" ±20%, "N" ±30%,
"C" ±0.25 pF, "D" ±0.5 pF, "Z" +80-20%.)

If there are no indications for the electrolytic capacitors, error is ±20%.

Resistors

VRD ..... Carbon-film type
VRS..... Carbon-film type
VRN ..... Metal-film type
VR • • MF ..... Cylindrical type (without lead wire)
VR • • MN..... Cylindrical type (without lead wire)
VR • • TV ..... Square type (without lead wire)
VR • • TQ ..... Square type (without lead wire)
VR • • CY ..... Square type (without lead wire)
VR • • CZ ..... Square type (without lead wire)
VR • • • • • • • • • J .. The 13th character represents error.
("J" ±5%, "F" ±1%, "D" ±0.5%.)

If there are no indications for other parts, the resistors are ±5% carbon-film type.

NOTE:
Parts marked with "⚠" are important for maintaining the safety of the set.
Be sure to replace parts with specified ones for maintaining the safety and performance of the set.

SD-CX1H

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION

SD-CX1H

INTEGRATED CIRCUITS

IC1	VHILA6558++-1	J	AQ	Focus/Tracking/Spin/Sled Driver, LA6558
IC2	VHITA2147F/-1	J	AM	Servo Pre Amp.,TA2147F
IC3	VHITC9490F/-1	J	AX	Servo/Signal Control,TC9490F
IC4	VHI74VHC08F-1	J	AE	Invertor,74VHC08F
IC101	VHIKIA358P+-1	J	AE	IC Ope Amp.,KIA358P
IC302	VHILC72131/-1	J	AP	PLL Controller,LC72131
IC303	VHILA1832S/-1	J	AN	FM IF Det./FM Mpx./AM IF, LA1832S
IC800	VHIAN78L05/-1	J	AE	Voltage Regulator,AN78L05
IC801	VHIKIA7812AP1	J	AF	Voltage Regulator,KIA7812AP
IC802	VHIKIA7806AP1	J	AF	Voltage Regulator,KIA7806AP
IC803	VHIKIA7812AP1	J	AF	Voltage Regulator,KIA7812AP
IC804	VHIKIA7805AP1	J	AF	Voltage Regulator,KIA7805AP
IC805	VHIAN78L05/-1	J	AE	Voltage Regulator,AN78L05
IC806	VHIKIA7805AP1	J	AF	Voltage Regulator,KIA7805AP
IC1101	VHIIR3R58M/-1	J	AM	RF Signal Processor,IR3R58M
IC1201	VHILR37816A-1	J	BQ	Endec/Atrac,LA37816A
IC1202	RH-IX2474AFZZ	J	BF	4Mbit D-RAM,IX2474AF
IC1300	VHI74ACT02T-1	J	AE	Head Driver,74ACT02T
IC1301	VHIFTD2005/-1	J	AG	Head Driver,FTD2005
IC1302	VHICPH5608/-1	J	AH	Head Driver,CPH5608
IC1401	RH-IX0410AWZZ	J	AY	MD System Microcomputer, IX0410AW
IC1402	VHI58X2402T-1	J	AF	EEPROM,58X2402T
IC1601	VHIM56788FP-1	J	AX	Motor Driver,M56788FP
IC1701	VHIUDA1345/-1	J	AU	AD/DA Converter,UDA1345
IC1702	VHINJM431U/-1	J	AE	Regulator,NJM431U
IC1801	VHIXC62EP32-1	J	AE	Regulator,XC62EP32
IC1802	VHIXC62FP26P1	J	AG	Regulator,XC62FP26P
ICA100	RH-IX2815AFZZ	J	AV	1Bit AD Converter,IX2815AF
ICA101~104	VHIHIP2100/-1	J	AQ	Gate Driver,HIP2100
ICA105	VHINJM78M9D-1	J	AG	Voltage Regulator,NJM78M9D
ICA110	VHITC74AC8T-1	J	AH	Quad 2 Input and Gate, TC74AC8T
ICD01	RH-IX0376AWZZ	J		System Microcomputer, IX0376AW
ICD02,03	VHIBU2092F/-1	J	AM	Input/Output Expander,BU2092F
ICD04	VHIPST9140/-1	J	AG	Reset,PST9140
ICP01	VHINJM4565M-1	J	AC	Pre Amp.,NJM4565M
ICS01	VHIKIA4558F-1	J	AF	Pre Amp.,KIA4558F
ICT21	VHILC72722/-1	J	AY	RDS Decorder,LC72722
ICU01	VHILC75341M-1	J	AM	Audio Processor,LC75341M
ICV98,99	VHIKIA4558P-1	J	AC	Ope Amp.,KIA4558P

TRANSISTORS

Q1	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR
Q2	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
Q4	VSKRC104M//-1	J	AC	Digital,NPN,KRC104 M
Q5	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
Q301	VS2SC380-O/-1	J	AC	Silicon,NPN,2SC380 O
Q360	VS2SB562-C/-1	J	AD	Silicon,PNP,2SB562 C
Q371	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR
Q800	VSKTA1023Y/-1	J	AE	Silicon,PNP,KTA1023 Y
Q801	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
Q802	VSKTA1271Y/-1	J	AC	Silicon,PNP,KTA1271 Y
Q803	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
Q900	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
Q1402	VSUN2113///-1	J	AB	Digital,PNP,UN2113
Q1403	VSUN2213///-1	J	AB	Digital,NPN,UN2213
Q1501	VSUN2214///-1	J	AB	Digital,NPN,UN2214
Q1700	VS2SD601AR/-1	J	AC	Silicon,NPN,2SD601 AR
Q1701	VSUN2213///-1	J	AB	Digital,NPN,UN2213
Q1702	VS2SA1162G/-1	J	AB	Silicon,PNP,2SA1162 G
Q1800	VSUN2214///-1	J	AB	Digital,NPN,UN2214
Q1801	VS2SA1162G/-1	J	AB	Silicon,PNP,2SA1162 G
Q1802	VSUN2214///-1	J	AB	Digital,NPN,UN2214
Q1803	VSUN221N///-1	J	AB	Digital,NPN,UN221 N
Q1804	VS2SB1205++-1	J	AF	Silicon,PNP,2SB1205
Q1805	VS2SA1314C/-1	J	AD	Silicon,PNP,2SA1314 C
Q1806	VSUN221N///-1	J	AB	Digital,NPN,UN221 N
Q1807	VS2SD601AR/-1	J	AC	Silicon,NPN,2SD601 AR
QA100,101	VSSLA5001++-1	J	AT	FET,SLA5001
QA102	VSKRA225S++-1	J		Digital,PNP,KRA225 S
QA103	VSKRC102S//-1	J	AB	Digital,NPN,KRC102 S
QD01	VSKRC107M//-1	J	AC	Digital,NPN,KRC107 M
QD03~05	VSKRA107M//-1	J	AE	Digital,PNP,KRA107 M
QD06	VSKRC104M//-1	J	AC	Digital,NPN,KRC104 M
QD07	VSKRC107M//-1	J	AC	Digital,NPN,KRC107 M
QD08	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
QD09	VSKRA107M//-1	J	AE	Digital,PNP,KRA107 M
QD10	VSKRC104M//-1	J	AC	Digital,NPN,KRC104 M
QP02	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
QP03,04	VS2SC2878B/-1	J	AC	Silicon,NPN,2SC2878 B
QP05	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR
QP06	VSKRA107M//-1	J	AE	Digital,PNP,KRA107 M
QP07	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
QP08	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR
QP09	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
QP10	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR
QS01	VSKRA107M//-1	J	AE	Digital,PNP,KRA107 M
QS02	VS2SK246GR/-1	J	AB	FET,2SK246 GR
QT21	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
QU01	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
QV87,88	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
QV89	VSKRC104M//-1	J	AC	Digital,NPN,KRC104 M
QV90	VSKTA1271Y/-1	J	AC	Silicon,PNP,KTA1271 Y
QV91	VSKTC3203Y/-1	J	AC	Silicon,NPN,KTC3203 Y
QV92	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
QV93,94	VSKRC107M//-1	J	AC	Digital,NPN,KRC107 M
QV95~99	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR

DIODES

D2	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D301~308	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D352	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
⚠ D800	VHDTS4B03G+-1	J	AH	Silicon,TS4B03G
D801~804	VHD2A02M+++-X	J	AC	Silicon,2A02M
D805~809	VHDDS1N404S-1	J	AB	Silicon,DS1N404S
D810	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D811,812	VHDDS1N404S-1	J	AB	Silicon,DS1N404S
D813~817	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D819~822	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D823	VHDDS1N404S-1	J	AB	Silicon,DS1N404S
D826	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
⚠ D900~903	VHDDS1N404S-1	J	AB	Silicon,DS1N404S
D904	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D1300	VHDSBE803//-1	J	AD	Silicon,SBE803
D1401	VHDSB00703Q-1	J	AB	Silicon,SB00703Q
D1402	VHD1SS355//-1	J	AB	Silicon,1SS355
DA100~107	VHDKDS160//-1	J	AB	Silicon,KDS160
DA108,109	VHD1SS362++-1	J	AD	Silicon,1SS362
DA112~119	VHDSFPW56++-1	J	AE	Silicon,SFPW56
DA126~129	VHD1SS361//-1	J	AB	Silicon,1SS361
DA130	VHDKDS160//-1	J	AB	Silicon,KDS160
DA131	VHD11ES4TB5-1	J	AA	Silicon,11ES4TB5
DA132	VHDKDS160//-1	J	AB	Silicon,KDS160
DD01~08	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
DP01,02	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
DP03~06	VHD11ES1///-1	J	AB	Silicon,11ES1
DS01	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
DT31	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
DU01	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
DU05,06	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
DV87~93	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
LEDD01	RUNTK3503AWS1	J	AZ	LED,Red/Green/Blue, STM515AS
LEDD02	VHP2647RT49-1	J	AD	LED,Red,2647RT49
LEDD07,08	VHP4204UYT4-1	J	AD	LED,Yellow,4204UYT4
LEDD09,10	VHP4204UGT4-1	J	AD	LED,Green,4204UGT4
ZD1	VHEDZ5R6BSB-1	J	AC	Zener,5.6V,DZ5.6BSB
ZD101	VHEDZ6R2BSB-1	J	AC	Zener,6.2V,DZ6.2BSB
ZD351	VHEDZ5R1BSB-1	J	AC	Zener,5.1V,DZ5.1BSB
ZD800	VHEDZ330BSD-1	J	AC	Zener,33V,DZ33BSD
ZD801	VHEDZ5R1BSB-1	J	AC	Zener,5.1V,DZ5.1BSB
ZD802	VHEDZ5R1BSA-1	J	AB	Zener,5.1V,DZ5.1BSA
ZD803	VHEDZ6R2BSB-1	J	AC	Zener,6.2V,DZ6.2BSB
ZD804	VHEDZ130BSA-1	J	AC	Zener,13V,DZ13BSA
ZDA110	VHEMA8051M/-1	J	AC	Zener,MA8051M
ZDA111	VHE02DZ120+-1	J		Zener,12V,02DZ12
ZDU02	VHEDZ100BSB-1	J	AB	Zener,10V,DZ10BSB
ZDV98	VHEDZ6R2BSA-1	J	AB	Zener,6.2V,DZ6.2BSA

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
FILTERS				
CF301,302	RFILF0072AFZZ	J	AG	FM IF,10.7 MHz
CF351	RFILF0003AWZZ	J	AK	FM IF
CF352	RFILA0009AWZZ	J	AE	AM IF
TRANSFORMERS				
T302	RCILA0062AWZZ	J	AC	AM Antenna
T306	RCILB0066AWZZ	J	AD	AM Oscillation
T351	RCILI0019AWZZ	J	AD	AM IF
⚠ T900	RTRNP0287AWZZ	J	AM	Power,Sub
⚠ T901	RTRNP0332AWZZ	J	BA	Power,Main
COILS				
L2,3	VP-DH2R2K0000	J	AB	2.2 µH,Peaking
L4	VP-XH2R2K0000	J	AB	2.2 µH,Choke
L5	RCILC0353AFZZ	J	AB	Tip Solid Induction,100mA
L341	RBLN-0001AWZZ	J	AD	Balun
L342	VP-DH2R2K0000	J	AB	2.2 µH,Peaking
L351,352	VP-DH101K0000	J	AB	100 µH,Choke
L353	VP-DH102K0000	J	AB	1 mH,Choke
L354	RFILL0001AWZZ	J	AE	Low Pass Filter
⚠ L900	RCILZ0021AWZZ	J	AF	Line Filter
L1100	VPBNNR47K0000	J	AC	0.47 µH
L1101	VPBNN100K0000	J	AC	10 µH
L1200	VPBNN4R7K0000	J	AC	4.7 µH
L1201,1202	VPBNNR47K0000	J	AC	0.47 µH
L1300	RCILC0358AFZZ	J	AC	4.7 µH,Choke
L1501	RCILZ0016AWZZ	J	AD	1 µH
L1502	VPBNN4R7K0000	J	AC	4.7 µH
L1551,1552	VPBNNR47K0000	J	AC	0.47 µH
L1554	VPBNNR47K0000	J	AC	0.47 µH
L1600	RCILZ0016AWZZ	J	AD	1 µH
L1701,1702	VPBNN100K0000	J	AC	10 µH
LA100	RCILZ0031AWZZ	J	AM	Coil,20 µH,10%
LA102	RCILZ0031AWZZ	J	AM	Coil,20 µH,10%
LA104	RCILZ0031AWZZ	J	AM	Coil,20 µH,10%
LA106	RCILZ0031AWZZ	J	AM	Coil,20 µH,10%
LA124	92LBEAD1782BT	J	AC	Ferrite Core
LA127	RCORF0020AWZZ	J	AD	Ferrite Core
LA130~133	RCORF0019AWZZ	J	AD	Ferrite Core
LD02~04	VP-DH2R2K0000	J	AB	2.2 µH,Peaking
LFA01,02	RCILZ0030AWZZ	J	AK	Coil,6.75 µH
LFA03,04	RCILZ0029AWZZ	J	AK	Coil,2.6 µH
LFA05,06	RCILZ0030AWZZ	J	AK	Coil,6.75 µH
LT21,22	VP-XH2R2K0000	J	AB	2.2 µH,Choke
VARIABLE RESISTORS				
VR351	RVR-M0026AWZZ	J	AC	10 kohm (B),Semi-VR [FM Mute Level]
VRA100	RVR-M0026AWZZ	J	AC	10 kohm (B),Semi-VR [Offset Output L-CH]
VRA101	RVR-M0026AWZZ	J	AC	10 kohm (B),Semi-VR [Offset Output R-CH]
VARIABLE CAPACITOR				
VD301	VHCSVC348S/-1	J	AK	Variable Capacitance,SVC348S
VIBRATORS				
CXA100	RCRSP0021AWZZ	J	AG	Crystal,11.2896 MHz
X1	RCRSP0005AWZZ	J	AF	Crystal,16.9344 MHz
X351	92LCRSTL1425A	J	AF	Crystal,456 kHz
X352	RCRSP0002AWZZ	J	AH	Crystal,4.5 MHz
XL1201	RCRSC0001AWZZ	J	AL	Crystal,33.8688 MHz
XLD01	RCRSP0009AWZZ	J	AK	Crystal,8.3886 MHz
XT21	RCRSP0010AWZZ	J	AH	Crystal,4.332 MHz
THERMISTOR				
⚠ PS801	RH-QX0006AWZZ	J	AE	Posistor,4.7 ohms

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
CAPACITORS				
C1	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C2	RC-EZD476AF1C	J	AC	47 µF,16V,Electrolytic
C4	RC-EZD107AF1A	J	AB	100 µF,10V,Electrolytic
C5	VCKYCY1HB102K	J	AA	0.001 µF,50V
C6	VCFYHA1HA334J	J	AC	0.33 µF,50V,Thin Film
C7,8	RC-EZD334AF1H	J	AB	0.33 µF,50V,Electrolytic
C9	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C10	VCEAZA1AW477M	J	AC	470 µF,10V,Electrolytic
C11	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C12	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C13	VCKYPA1HF473Z	J	AB	0.047 µF,50V
C14	VCCCCY1HH4R0C	J	AA	4 pF (CH),50V
C15	VCCCCY1HH270J	J	AA	27 pF (CH),50V
C16	VCCCCY1HH220J	J	AA	22 pF (CH),50V
C17,18	VCFYHA1HA104J	J	AB	0.1 µF,50V,Thin Film
C19	VCKYCY1HB471K	J	AA	470 pF,50V
C20	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C21,22	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C23	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C25	VCKYCY1HB682K	J	AA	0.0068 µF,50V
C26	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C27	VCCCCY1HH470J	J	AA	47 pF (CH),50V
C28	VCEAZA1CW476M	J	AB	47 µF,16V,Electrolytic
C29	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C30	VCKYCY1HB153K	J	AA	0.015 µF,50V
C31	VCKYCY1HB103K	J	AA	0.01 µF,50V
C32	VCKYCY1HB272K	J	AA	0.0027 µF,50V
C33	VCKYCY1HB332K	J	AA	0.0033 µF,50V
C34,35	VCKYCY1CB333K	J	AA	0.033 µF,16V
C36	VCCCCY1HH221J	J	AA	220 pF (CH),50V
C37	VCKYCY1CB473K	J	AA	0.047 µF,16V
C38	VCKYCY1HB681K	J	AA	680 pF,50V
C39	VCKYCY1CB473K	J	AA	0.047 µF,16V
C40,41	VCKYCY1CB683K	J	AB	0.068 µF,16V
C42	VCEAZA1CW476M	J	AB	47 µF,16V,Electrolytic
C43	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C44	VCKYCY1CB473K	J	AA	0.047 µF,16V
C46	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C47	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C48,49	VCCCCY1HH150J	J	AA	15 pF (CH),50V
C50	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C51	VCCSPA1HL100J	J	AA	10 pF,50V
C52	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C53	VCFYHA1HA104J	J	AB	0.1 µF,50V,Thin Film
C60,61	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C62	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C63	VCEAEA1CW106M	J	AB	10 µF,16V,Electrolytic
C64	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C66,67	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C68	VCKYPA1HF223Z	J	AB	0.022 µF,50V
C69,70	VCEAEA1CW106M	J	AB	10 µF,16V,Electrolytic
C71,72	VCEAEA1CW476M	J	AB	47 µF,16V,Electrolytic
C73,74	VCKYCY1EF104Z	J	AA	0.1 µF,25V
C76,77	VCKYBT1HB102K	J	AA	0.001 µF,50V [Serial No.101×××××× Only]
C76,77	VCKYCY1HB102K	J	AA	0.001 µF,50V [Serial No.102×××××~]
C101~103	VCKYCY1EF104Z	J	AA	0.1 µF,25V
C104	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C105	VCKYCY1EF104Z	J	AA	0.1 µF,25V
C106,107	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C301,302	VCKYBT1HB102K	J	AA	0.001 µF,50V
C310,311	VCCCCY1HH101J	J	AA	100 pF (CH),50V
C312	VCKYCY1HB102K	J	AA	0.001 µF,50V
C321	VCEAZA1CW107M	J	AC	100 µF,16V,Electrolytic
C323	VCTYBT1EF223Z	J	AA	0.022 µF,25V
C324	VCEAZA1HW474M	J	AB	0.47 µF,50V,Electrolytic
C330	VCCUBT1HJ150J	J	AA	15 pF (UJ),50V
C331	VCKYPA1HF473Z	J	AB	0.047 µF,50V
C332	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C334	VCCUBT1HJ180J	J	AA	18 pF (UJ),50V
C335	VCKYCY1HB331K	J	AA	330 pF,50V
C337	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C338	VCTYBT1CX222M	J	AA	0.0022 µF,16V
C339	VCCCCY1HH101J	J	AA	100 pF (CH),50V
C341,342	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C343	VCCCCY1HH330J	J	AA	33 pF (CH),50V
C345~347	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C350	VCKYPA1HF473Z	J	AB	0.047 µF,50V

SD-CX1H

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
C351	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C352	VCEAEA1CW106M	J	AB	10 µF,16V,Electrolytic
C353,354	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C355	VCCCCY1HH220J	J	AA	22 pF (CH),50V
C356	VCKYCY1HB102K	J	AA	0.001 µF,50V
C357	VCEAEA1HW225M	J	AB	2.2 µF,50V,Electrolytic
C358	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
C361	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C362	VCEAEA1HW335M	J	AB	3.3 µF,50V,Electrolytic
C363	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C364	VCEAEA1CW106M	J	AB	10 µF,16V,Electrolytic
C365	VCTYPA1CX223K	J	AA	0.022 µF,16V
C366	VCKYCY1HB102K	J	AA	0.001 µF,50V
C367,368	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
C370~372	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
C373,374	VCTYPA1CX183K	J	AA	0.018 µF,16V
C376	VCTYBT1EF223Z	J	AA	0.022 µF,25V
C377	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C380	VCEAEA1CW106M	J	AB	10 µF,16V,Electrolytic
C381	VCCCCY1HH120J	J	AA	12 pF (CH),50V
C382	VCCCCY1HH150J	J	AA	15 pF (CH),50V
C384	VCKYBT1HB102K	J	AA	0.001 µF,50V
C385	VCTYPA1CX103K	J	AA	0.01 µF,16V
C386	VCKYBT1HB331K	J	AA	330 pF,50V
C387	VCKYCY1CB473K	J	AA	0.047 µF,16V
C389,390	VCKYCY1HB102K	J	AA	0.001 µF,50V
C391	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C392	VCKYCY1HB102K	J	AA	0.001 µF,50V
C393	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
C394	VCEAEA1EW476M	J	AA	47 µF,25V,Electrolytic
C395	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C396	VCEAEA1AW107M	J	AB	100 µF,10V,Electrolytic
C397	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C398	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C399	VCKYCY1EF223Z	J	AB	0.022 µF,25V
C800,801	VCFYHA1HA224J	J	AC	0.22 µF,50V,Thin Film
C802,803	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C804,805	RC-EZ0050AWZZ	J	AK	3300 µF,25V,Electrolytic
C806	VCEAZV1EW108M	J	AE	1000 µF,25V,Electrolytic
C807	VCEAZW1EW478M	J	AK	4700 µF,25V,Electrolytic
C808	VCEAZA1HW107M	J	AC	100 µF,50V,Electrolytic
C809	VCEAZV1HW477M	J	AE	470 µF,50V,Electrolytic
C810	VCEAZA1HW107M	J	AC	100 µF,50V,Electrolytic
C811	VCEAZA1JW476M	J	AC	47 µF,63V,Electrolytic
C812,813	VCEAZA1HW476M	J	AB	47 µF,50V,Electrolytic
C814	VCEAZA1VW107M	J	AC	100 µF,35V,Electrolytic
C815	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
C816	VCKYPA1HF223Z	J	AB	0.022 µF,50V
C817	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C818	VCEAZA0JW108M	J	AC	1000 µF,6.3V,Electrolytic
C819	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
C820	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C821	VCFYHA1HA473J	J	AB	0.047 µF,50V,Thin Film
C822	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
C823	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C824	VCFYHA1HA473J	J	AB	0.047 µF,50V,Thin Film
C825	VCEAZA1CW106M	J	AC	10 µF,16V,Electrolytic
C826	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
C827	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C828	VCFYHA1HA473J	J	AB	0.047 µF,50V,Thin Film
C829	VCEAZA1CW106M	J	AC	10 µF,16V,Electrolytic
C830	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C831	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
C832	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C833	VCFYHA1HA473J	J	AB	0.047 µF,50V,Thin Film
C834	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
C835	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C836	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C837	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
C838	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C839	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C840,841	RC-EZ0050AWZZ	J	AK	3300 µF,25V,Electrolytic
⚠ C900	RC-KZ001LAWZZ	J	AB	0.0047 µF,250V,Ceramic
C901,902	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C903	VCEAZA1EW477M	J	AD	470 µF,25V,Electrolytic
C1100	RC-KZ0003AWZZ	J	AE	4.7 µF,10V
C1107	VCKYCY1CB223K	J	AA	0.022 µF,16V
C1110,1111	VCKYTV1CF105Z	J	AB	1 µF,16V
C1112	VCCCCY1HH5R0C	J	AA	5 pF (CH),50V
C1113	VCKYTV0JB105K	J	AD	1 µF,6.3V
C1114,1115	VCKYCY1CB104K	J	AB	0.1 µF,16V
C1116	VCKYTV0JB105K	J	AD	1 µF,6.3V
C1117	VCKYTV1CF105Z	J	AB	1 µF,16V
C1118,1119	VCKYTV1CB474K	J	AC	0.47 µF,16V
C1121	VCKYTV1CB224K	J	AB	0.22 µF,16V
C1122	VCKYTV1CF105Z	J	AB	1 µF,16V
C1123	VCKYCY1CB104K	J	AB	0.1 µF,16V
C1124	VCKYTV1CB104K	J	AA	0.1 µF,16V
C1125	VCKYTV1CF105Z	J	AB	1 µF,16V
C1200	VCKYTV1CF105Z	J	AB	1 µF,16V
C1201	RC-KZ0002AWZZ	J	AE	10 µF,10V
C1202,1203	VCKYTV1CF105Z	J	AB	1 µF,16V
C1205	VCKYTV1CF105Z	J	AB	1 µF,16V
C1206	VCKYCY1EF104Z	J	AA	0.1 µF,25V
C1207	VCKYTV1CF105Z	J	AB	1 µF,16V
C1208,1209	VCCCCY1HH120J	J	AA	12 pF (CH),50V
C1210	VCCCCY1HH220J	J	AA	22 pF (CH),50V
C1211	VCKYCY1EF104Z	J	AA	0.1 µF,25V
C1230	VCKYTV1CF105Z	J	AB	1 µF,16V
C1261~1265	VCCCCY1HH221J	J	AA	220 pF (CH),50V
C1266	VCCCCY1HH220J	J	AA	22 pF (CH),50V
C1300	VCCCTV1HH470J	J	AA	47 pF (CH),50V
C1301	VCKYCY1CB223K	J	AA	0.022 µF,16V
C1302	RC-KZ0002AWZZ	J	AE	10 µF,10V
C1303	VCKYTV1CF105Z	J	AB	1 µF,16V
C1304	VCCCTV1HH221J	J	AA	220 pF (CH),50V
C1403,1404	VCKYCY1HF103Z	J	AB	0.01 µF,50V
C1405,1406	VCKYCY1HB681K	J	AA	680 pF,50V
C1407	VCKYCY1EF104Z	J	AA	0.1 µF,25V
C1409	VCKYTV1CF105Z	J	AB	1 µF,16V
C1501	VCKYTV1CF105Z	J	AB	1 µF,16V
C1502	VCCCTV1HH331J	J	AA	330 pF (CH),50V
C1503	VCKYTQ1CB334K	J	AC	0.33 µF,16V
C1505	VCKYCY1EF104Z	J	AA	0.1 µF,25V
C1506	VCCCCY1HH101J	J	AA	100 pF (CH),50V
C1507	VCKYCY1EF104Z	J	AA	0.1 µF,25V
C1509	VCCCCY1HH101J	J	AA	100 pF (CH),50V
C1602	VCCCCY1HH471J	J	AA	470 pF (CH),50V
C1603	VCCCCY1HH681J	J	AC	680 pF (CH),50V
C1606	RC-KZ0002AWZZ	J	AE	10 µF,10V
C1607	VCKYTV1CF105Z	J	AB	1 µF,16V
C1610	RC-KZ0003AWZZ	J	AE	4.7 µF,10V
C1611	VCKYCY1HB472K	J	AA	0.0047 µF,50V
C1613	VCKYCY1CB103K	J	AA	0.01 µF,16V
C1616	VCEAPS107AF1A	J	AD	100 µF,10V,Electrolytic
C1619	VCCCCY1HH331J	J	AA	330 pF (CH),50V
C1655	VCKYCY1HF103Z	J	AB	0.01 µF,50V
C1700,1701	VCEAPS476AF0G	J	AC	47 µF,4V,Electrolytic
C1702	VCKYCY1HB102K	J	AA	0.001 µF,50V
C1703	VCKYCY1EF104Z	J	AA	0.1 µF,25V
C1704	VCEAPS476AF0G	J	AC	47 µF,4V,Electrolytic
C1705	VCKYCY1EF104Z	J	AA	0.1 µF,25V
C1706	VCKYTV1HF103Z	J	AA	0.01 µF,50V
C1707	VCKYTV1CF105Z	J	AB	1 µF,16V
C1708,1709	VCKYTV1HF103Z	J	AA	0.01 µF,50V
C1710	RC-EZ1620AFZZ	J	AC	10 µF,16V,Electrolytic
C1711	VCEAPS476AF0G	J	AC	47 µF,4V,Electrolytic
C1712	RC-EZ1620AFZZ	J	AC	10 µF,16V,Electrolytic
C1713	VCKYTV1HF103Z	J	AA	0.01 µF,50V
C1714	VCKYTV1CF105Z	J	AB	1 µF,16V
C1715	VCKYTV1CB104K	J	AA	0.1 µF,16V
C1716	VCEAPS476AF0G	J	AC	47 µF,4V,Electrolytic
C1741	VCCCCY1HH681J	J	AC	680 pF (CH),50V
C1750	VCCCCY1HH681J	J	AC	680 pF (CH),50V
C1800	VCEAPS227AF0G	J	AC	220 µF,4V,Electrolytic
C1801,1802	RC-KZ0002AWZZ	J	AE	10 µF,10V
C1803	VCEAPS107AF1A	J	AD	100 µF,10V,Electrolytic
C1804	VCKYTQ1CF225Z	J	AB	2.2 µF,16V
C1805,1806	VCKYTV1CF105Z	J	AB	1 µF,16V
CA100,101	VCCCCY1HH180J	J	AA	18 pF (CH),50V
CA102~104	VCKYCY1EF104Z	J	AA	0.1 µF,25V
CA105,106	RC-EZ0007AWZZ	J	AF	10 µF,10V,Electrolytic
CA107	VCKYCY1EF104Z	J	AA	0.1 µF,25V
CA108,109	RC-EZ0051AWZZ	J	AC	10 µF,10V,Electrolytic
CA110	VCKYCY1EF104Z	J	AA	0.1 µF,25V
CA111	RC-EZD337AF0J	J	AC	330 µF,6.3V,Electrolytic
CA112~115	VCKYTQ1EB105K	J		1 µF,25V
CA116	VCKYCY1CF224Z	J	AB	0.22 µF,16V
CA117	VCKYTQ1HB224K	J	AC	0.22 µF,50V
CA118,119	VCKYCY1CF224Z	J	AB	0.22 µF,16V
CA120	VCKYTQ1HB224K	J	AC	0.22 µF,50V
CA121	VCKYCY1CF224Z	J	AB	0.22 µF,16V
CA122~125	RC-KZ0007AWZZ	J	AG	1.0 µF,50V,Electrolytic
CA126	VCKYCY1CF224Z	J	AB	0.22 µF,16V

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
CA127	VCKYTQ1HB224K	J	AC	0.22 µF,50V
CA128,129	VCKYCY1CF224Z	J	AB	0.22 µF,16V
CA130	VCKYTQ1HB224K	J	AC	0.22 µF,50V
CA131	VCKYCY1CF224Z	J	AB	0.22 µF,16V
CA132~135	RC-KZ0007AWZZ	J	AG	1.0 µF,50V,Electrolytic
CA142,143	VCFYDA1HA155J	J	AG	1.5 µF,50V,Thin Film
CA150,151	VCFYDA1HA155J	J	AG	1.5 µF,50V,Thin Film
CA152	VCCCCY1HH120J	J	AA	12 pF (CH),50V
CA153,154	VCCCCY1HH180J	J	AA	18 pF (CH),50V
CA155	VCCCCY1HH120J	J	AA	12 pF (CH),50V
CA159	VCE9GA1EW107M	J	AE	100 µF,25V,Electrolytic,Non-Polar
CA160	VCEAZA1EW107M	J	AB	100 µF,25V,Electrolytic
CA162	VCEAZA1HW106M	J	AB	10 µF,50V,Electrolytic
CA163	VCEAZA1CW227M	J	AC	220 µF,16V,Electrolytic
CA164,165	RC-EZD107AF1A	J	AB	100 µF,10V,Electrolytic
CA177~180	VCKYCY1EB103K	J	AA	0.01 µF,25V
CA181	VCCCCY1HH101J	J	AA	100 pF (CH),50V
CA182	VCKYCY1EF104Z	J	AA	0.1 µF,25V
CA184	RC-EZD476AF1A	J	AC	47 µF,10V,Electrolytic
CA185	VCKYCY1HB102K	J	AA	0.001 µF,50V
CA186	RC-EZD476AF1A	J	AC	47 µF,10V,Electrolytic
CA187~193	VCKYCY1HB102K	J	AA	0.001 µF,50V
CA194	RC-EZD476AF1C	J	AC	47 µF,16V,Electrolytic
CA196,197	RC-EZD476AF1E	J	AC	47 µF,25V,Electrolytic
CA198	VCKYCY1EF104Z	J	AA	0.1 µF,25V
CA211	VCKYCY1EF104Z	J	AA	0.1 µF,25V
CA212	RC-EZD107AF1C	J	AC	100 µF,16V,Electrolytic
CA213	RC-EZD107AF1E	J	AD	100 µF,25V,Electrolytic
CA214	VCKYCY1HB102K	J	AA	0.001 µF,50V
CA215~222	VCCCCY1HH560J	J	AA	56 pF (CH),50V
CA223,224	VCFYHA1HA224J	J	AC	0.22 µF,50V,Thin Film
CD01~03	VCEAZA1HW105M	J	AB	1 µF,50V,Electrolytic
CD04	VCTYBT1EF223Z	J	AA	0.022 µF,25V
CD05	VCEAZA1CW476M	J	AB	47 µF,16V,Electrolytic
CD06	VCTYMN1EF223Z	J	AA	0.022 µF,25V
CD07	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
CD10	VCTYBT1EF223Z	J	AA	0.022 µF,25V
CD11	VCEAEA1CW106M	J	AB	10 µF,16V,Electrolytic
CD12~14	VCCSMN1HL470J	J	AA	47 pF,50V
CD16,17	VCKYMN1HB101K	J	AA	100 pF,50V
CD18	VCCSMN1HL470J	J	AA	47 pF,50V
CD19	VCTYMN1EF223Z	J	AA	0.022 µF,25V
CD20	VCEAZA1CW106M	J	AC	10 µF,16V,Electrolytic
CD21,22	VCCCMN1HH150J	J	AA	15 pF (CH),50V
CD23	VCCCMN1HH180J	J	AA	18 pF (CH),50V
CD29	VCTYBT1EF223Z	J	AA	0.022 µF,25V
CD30	VCEAEA1CW106M	J	AB	10 µF,16V,Electrolytic
CD31	VCKYBT1HB101K	J	AA	100 pF,50V
CD32~35	VCKYMN1HB101K	J	AA	100 pF,50V
CD36,37	VCTYMN1EF103Z	J	AB	0.01 µF,25V
CD38~40	VCTYMN1EF223Z	J	AA	0.022 µF,25V
CD45	VCKYMN1HB151K	J	AA	150 pF,50V
CD46	VCTYMN1EF223Z	J	AA	0.022 µF,25V
CD47	VCTYMN1CY103M	J	AA	0.01 µF,16V
CD48	VCEAEA1HW475M	J	AB	4.7 µF,50V,Electrolytic
CD49	VCFYHA1HA104J	J	AB	0.1 µF,50V,Thin Film
CD50	VCEAZA1AW477M	J	AC	470 µF,10V,Electrolytic
CD51	VCEAEA1CW226M	J	AB	22 µF,16V,Electrolytic
CD52	VCTYMN1EF223Z	J	AA	0.022 µF,25V
CD53	VCEAEA1CW106M	J	AB	10 µF,16V,Electrolytic
CD54	VCKYBT1HB331K	J	AA	330 pF,50V
CD55	VCKYBT1HB102K	J	AA	0.001 µF,50V
CD56	VCKYMN1HB102K	J	AA	0.001 µF,50V
CP01,02	VCEAEA1HW225M	J	AB	2.2 µF,50V,Electrolytic
CP03,04	VCCCCY1HH220J	J	AA	22 pF (CH),50V
CP05,06	VCCCCY1HH101J	J	AA	100 pF (CH),50V
CP07,08	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
CP09,10	VCEAEA1HW225M	J	AB	2.2 µF,50V,Electrolytic
CP13,14	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
CP23,24	VCEAZA1CW226M	J	AC	22 µF,16V,Electrolytic
CP33,34	VCEAZA1CW107M	J	AC	100 µF,16V,Electrolytic
CS01,02	VCQYKA1HM823K	J	AC	0.082 µF,50V,Mylar
CS03,04	VCKYCY1HB472K	J	AA	0.0047 µF,50V
CS05,06	VCKYCY1HB332K	J	AA	0.0033 µF,50V
CS08,09	VCEAEA1HW224M	J	AB	0.22 µF,50V,Electrolytic
CS10,11	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
CT21	VCEAZA1AW476M	J	AB	47 µF,10V,Electrolytic
CT22	VCTYBT1EF223Z	J	AA	0.022 µF,25V
CT23	VCEAEA1CW106M	J	AB	10 µF,16V,Electrolytic
CT24	VCTYBT1EF223Z	J	AA	0.022 µF,25V
CT25	VCKYCY1HB561K	J	AA	560 pF,50V
CT26,27	VCCCCY1HH220J	J	AA	22 pF (CH),50V
CT28	VCEAZA1AW476M	J	AB	47 µF,10V,Electrolytic
CT29	VCTYBT1EF223Z	J	AA	0.022 µF,25V
CT36	VCKYPA1HF223Z	J	AB	0.022 µF,50V
CT37	VCTYBT1EF223Z	J	AA	0.022 µF,25V
CU01,02	VCEAEA1HW225M	J	AB	2.2 µF,50V,Electrolytic
CU05~08	VCEAEA1HW225M	J	AB	2.2 µF,50V,Electrolytic
CU09,10	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
CU11,12	VCEAEA1HW225M	J	AB	2.2 µF,50V,Electrolytic
CU13,14	VCKYCY1HB102K	J	AA	0.001 µF,50V
CU15,16	VCEAEA1HW224M	J	AB	0.22 µF,50V,Electrolytic
CU17,18	VCEAEA1HW334M	J	AB	0.33 µF,50V,Electrolytic
CU19,20	VCCCCY1HH470J	J	AA	47 pF (CH),50V
CU21,22	VCKYCY1HB471K	J	AA	470 pF,50V
CU30	RC-EZ0048AWZZ	J	AC	22 µF,16V,Electrolytic
CU31	VCKYCY1EF223Z	J	AB	0.022 µF,25V
CU32	VCEAZA1CW107M	J	AC	100 µF,16V,Electrolytic
CU33	RC-EZ0004AWZZ	J	AD	100 µF,10V,Electrolytic
CU34~36	VCCCCY1HH101J	J	AA	100 pF (CH),50V
CU41	VCKYCY1HB222K	J	AA	0.0022 µF,50V
CU42	VCKYCY1HB222K	J	AA	0.0022 µF,50V
CU43	VCKYBT1HB102K	J	AA	0.001 µF,50V
CU45	RC-EZ0004AWZZ	J	AD	100 µF,10V,Electrolytic
CU46	VCTYBT1CX332M	J	AA	0.0033 µF,16V
CU47	VCKYBT1HB102K	J	AA	0.001 µF,50V
CU48	VCKYCY1HB102K	J	AA	0.001 µF,50V
CU49	VCKYCY1HB471K	J	AA	470 pF,50V
CU50	VCKYCY1HB102K	J	AA	0.001 µF,50V
CV66,67	VCEAEA1HW105M	J	AB	1 µF,50V,Electrolytic
CV72,73	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
CV74	VCEAZA1CW106M	J	AC	10 µF,16V,Electrolytic
CV75,76	VCFYHA1HA104J	J	AB	0.1 µF,50V,Thin Film
CV77	VCTYMN1CY103M	J	AA	0.01 µF,16V
CV78	VCTYMN1EF223Z	J	AA	0.022 µF,25V
CV79	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
CV80	VCTYMN1CX222K	J	AA	0.0022 µF,16V
CV81	VCTYBT1EF223Z	J	AA	0.022 µF,25V
CV82	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
CV83	VCEAZA1CW226M	J	AC	22 µF,16V,Electrolytic
CV88	VCTYMN1EF223Z	J	AA	0.022 µF,25V
CV89	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
CV90	VCTYBT1CX222M	J	AA	0.0022 µF,16V
CV92	VCKYBT1HB331J	J	AA	330 pF,50V
CV93	VCTYMN1EF223Z	J	AA	0.022 µF,25V
CV94	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
CV95,96	VCTYMN1CX222K	J	AA	0.0022 µF,16V
CV97~99	VCQYKA1HM102J	J	AB	0.001 µF,50V,Mylar
R1707	VCCCCY1HH331J	J	AA	330 pF (CH),50V
R1710	VCCCCY1HH331J	J	AA	330 pF (CH),50V

RESISTORS

	VRD-MN2BD000C	J	AA	0 ohm,Jumper,ø1.4×3.5mm,Ivory
	VRS-CY1JB000J	J	AA	0 ohm,Jumper,0.8×1.55mm,Green
	VRS-TV2AB000J	J	AA	0 ohm,Jumper,1.25×2mm,Green
R1	VRS-CY1JB473J	J	AA	47 kohms,1/16W
R2,3	VRS-CY1JB823J	J	AA	82 kohms,1/16W
R4	VRS-CY1JB473J	J	AA	47 kohms,1/16W
R5,6	VRS-CY1JB823J	J	AA	82 kohms,1/16W
R8	VRD-ST2EE100J	J	AA	10 ohm,1/4W
R9,10	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R11	VRS-CY1JB473J	J	AA	47 kohms,1/16W
R12	VRS-CY1JB821J	J	AA	820 ohms,1/16W
R13	VRD-ST2CD333J	J	AA	33 kohms,1/6W
R14	VRS-CY1JB222J	J	AA	2.2 kohms,1/16W
R16	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R17	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R18	VRS-CY1JB101J	J	AA	100 ohm,1/16W
R19	VRS-CY1JB683J	J	AA	68 kohms,1/16W
R20	VRS-CY1JB682J	J	AA	6.8 kohms,1/16W
R23	VRS-CY1JB473J	J	AA	47 kohms,1/16W
R24	VRS-CY1JB562J	J	AA	5.6 kohms,1/16W
R25	VRS-CY1JB473J	J	AA	47 kohms,1/16W
R26	VRS-CY1JB154J	J	AA	150 kohms,1/16W
R27	VRS-CY1JB153J	J	AA	15 kohms,1/16W
R28	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R31	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R38	VRS-CY1JB105J	J	AA	1 Mohm,1/16W
R42	VRS-CY1JB101J	J	AA	100 ohm,1/16W
R44	VRS-CY1JB101J	J	AA	100 ohm,1/16W
R45~50	VRS-CY1JB472J	J	AA	4.7 kohms,1/16W
R52	VRS-CY1JB102J	J	AA	1 kohm,1/16W

SD-CX1H

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
R53	VRS-CY1JB101J	J	AA	100 ohm,1/16W
R54~57	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R58	VRS-CY1JB101J	J	AA	100 ohm,1/16W
R60	VRS-CY1JB122J	J	AA	1.2 kohms,1/16W
R61	VRD-ST2EE470J	J	AA	47 ohms,1/4W
R62	VRS-CY1JB220J	J	AA	22 ohms,1/16W
R63	VRS-CY1JB101J	J	AA	100 ohm,1/16W
R64	VRS-CY1JB333J	J	AA	33 kohms,1/16W
R65	VRS-CY1JB392J	J	AA	3.9 kohms,1/16W
R66	VRS-CY1JB123J	J	AA	12 kohms,1/16W
R67,68	VRS-CY1JB392J	J	AA	3.9 kohms,1/16W
R69~72	VRS-CY1JB223J	J	AA	22 kohms,1/16W
R74	VRD-ST2CD222J	J	AA	2.2 kohms,1/6W [Serial No.101×××××× Only]
R74	VRS-CY1JB222J	J	AA	2.2 kohms,1/16W [Serial No.102×××××~]
R101	VRS-CY1JB104J	J	AA	100 kohm,1/16W
R102	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R103	VRS-CY1JB222J	J	AA	2.2 kohms,1/16W
R104	VRS-CY1JB123J	J	AA	12 kohms,1/16W
R105	VRS-CY1JB104J	J	AA	100 kohm,1/16W
R106	VRS-CY1JB562J	J	AA	5.6 kohms,1/16W
R107	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R108	VRD-ST2CD221J	J	AA	220 ohms,1/6W
R109	VRD-ST2CD1R0J	J	AA	1 ohm,1/6W
R110,111	VRS-CY1JB101J	J	AA	100 ohm,1/16W
R323	VRS-CY1JB683J	J	AA	68 kohms,1/16W
R336	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R344	VRS-CY1JB471J	J	AA	470 ohms,1/16W
R345	VRS-CY1JB472J	J	AA	4.7 kohms,1/16W
R346	VRD-ST2CD331J	J	AA	330 ohms,1/6W
R347	VRS-CY1JB682J	J	AA	6.8 kohms,1/16W
R348	VRS-CY1JB681J	J	AA	680 ohms,1/16W
R349	VRS-CY1JB330J	J	AA	33 ohms,1/16W
R350	VRS-CY1JB272J	J	AA	2.7 kohms,1/16W
R351	VRS-CY1JB562J	J	AA	5.6 kohms,1/16W
R352	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R353	VRS-CY1JB271J	J	AA	270 ohms,1/16W
R354	VRS-CY1JB392J	J	AA	3.9 kohms,1/16W
R355	VRS-CY1JB332J	J	AA	3.3 kohms,1/16W
R356	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R357	VRS-CY1JB474J	J	AA	470 kohms,1/16W
R358	VRS-CY1JB822J	J	AA	8.2 kohms,1/16W
R359	VRS-CY1JB182J	J	AA	1.8 kohms,1/16W
R360	VRS-CY1JB472J	J	AA	4.7 kohms,1/16W
R361,362	VRS-CY1JB221J	J	AA	220 ohms,1/16W
R363,364	VRS-CY1JB153J	J	AA	15 kohms,1/16W
R369	VRD-ST2CD820J	J	AA	82 ohms,1/6W
R370	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R371	VRS-CY1JB472J	J	AA	4.7 kohms,1/16W
R372~374	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R376	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R377	VRD-ST2CD473J	J	AA	47 kohms,1/6W
R378	VRS-CY1JB823J	J	AA	82 kohms,1/16W
R379	VRS-CY1JB222J	J	AA	2.2 kohms,1/16W
R380	VRS-CY1JB152J	J	AA	1.5 kohms,1/16W
R381	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R382	VRD-ST2EE151J	J	AA	150 ohms,1/4W
R383~385	VRS-CY1JB562J	J	AA	5.6 kohms,1/16W
R386	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R389	VRS-CY1JB392J	J	AA	3.9 kohms,1/16W
R391,392	VRD-ST2EE271J	J	AA	270 ohms,1/4W
R393	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R395	VRS-CY1JB473J	J	AA	47 kohms,1/16W
R399	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R800	VRD-MN2BD222J	J	AA	2.2 kohms,1/8W
R801	VRD-MN2BD101J	J	AA	100 ohm,1/8W
R802	VRD-MN2BD123J	J	AA	12 kohms,1/8W
R803,804	VRD-RT2HD221J	J	AA	220 ohms,1/2W
R805	VRD-RT2HD101J	J	AA	100 ohm,1/2W
R806	VRD-RT2HD221J	J	AA	220 ohms,1/2W
R807	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R808	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R809,810	VRD-ST2EE331J	J	AA	330 ohms,1/4W
R811	VRD-MN2BD104J	J	AA	100 kohm,1/8W
R812	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R813,814	VRD-ST2EE331J	J	AA	330 ohms,1/4W
R815	VRD-MN2BD104J	J	AA	100 kohm,1/8W
R816	VRD-ST2EE102J	J	AA	1 kohm,1/4W
R817	VRD-MN2BD151J	J	AA	150 ohms,1/8W
R818	VRD-ST2CD473J	J	AA	47 kohms,1/6W
R819	VRD-MN2BD393J	J	AA	39 kohms,1/8W
R820	VRD-MN2BD474J	J	AA	470 kohms,1/8W
R821	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R822	VRD-ST2EE151J	J	AA	150 ohms,1/4W
R823	VRD-MN2BD104J	J	AA	100 kohm,1/8W
R824	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
R825,826	VRD-ST2EE331J	J	AA	330 ohms,1/4W
R827	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R901	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
R902	VRD-ST2CD473J	J	AA	47 kohms,1/6W
R1100	VRS-TQ2BB270J	J	AA	27 ohms,1/8W
R1101	VRS-CY1JB1R0J	J	AA	1 ohm,1/16W
R1102	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1105	VRS-CY1JB122J	J	AA	1.2 kohms,1/16W
R1110	VRS-CY1JB684F	J	AA	680 kohms,1/16W
R1111,1112	VRS-CY1JB104F	J	AA	100 kohm,1/16W
R1113	VRS-CY1JB684F	J	AA	680 kohms,1/16W
R1114	VRS-CY1JB123J	J	AA	12 kohms,1/16W
R1115	VRS-CY1JB334F	J	AA	330 kohms,1/16W
R1116,1117	VRS-CY1JB473F	J	AA	47 kohms,1/16W
R1118	VRS-CY1JB334F	J	AA	330 kohms,1/16W
R1119	VRS-CY1JB224J	J	AA	220 kohms,1/16W
R1120	VRS-CY1JB564J	J	AA	560 kohms,1/16W
R1121	VRS-CY1JB104J	J	AA	100 kohm,1/16W
R1122,1123	VRS-CY1JB123J	J	AA	12 kohms,1/16W
R1124,1125	VRS-CY1JB222J	J	AA	2.2 kohms,1/16W
R1201	VRS-CY1JB563F	J	AA	56 kohms,1/16W
R1203	VRS-CY1JB104F	J	AA	100 kohm,1/16W
R1205	VRS-CY1JB683J	J	AA	68 kohms,1/16W
R1207	VRS-CY1JB393J	J	AA	39 kohms,1/16W
R1208	VRS-CY1JB221J	J	AA	220 ohms,1/16W
R1209	VRS-CY1JB101J	J	AA	100 ohm,1/16W
R1210,1211	VRS-CY1JB221J	J	AA	220 ohms,1/16W
R1212	VRS-CY1JB470J	J	AA	47 ohms,1/16W
R1214	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1215	VRS-CY1JB105J	J	AA	1 Mohm,1/16W
R1217	VRS-CY1JB151J	J	AA	150 ohms,1/16W
R1221,1222	VRS-CY1JB473J	J	AA	47 kohms,1/16W
R1230,1231	VRS-CY1JB103F	J	AA	10 kohm,1/16W
R1232	VRS-CY1JB123J	J	AA	12 kohms,1/16W
R1261~1266	VRS-CY1JB273J	J	AA	27 kohms,1/16W
R1300	VRS-TV2AB6R8J	J	AA	6.8 ohms,1/10W
R1301	VRS-CY1JB100J	J	AA	10 ohm,1/16W
R1304	VRS-TV2AB151J	J	AA	150 ohms,1/10W
R1401	VRS-CY1JB272J	J	AA	2.7 kohms,1/16W
R1403	VRS-CY1JB471J	J	AA	470 ohms,1/16W
R1405	VRS-CY1JB104J	J	AA	100 kohm,1/16W
R1406	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1407,1408	VRS-CY1JB332J	J	AA	3.3 kohms,1/16W
R1414	VRS-CY1JB224J	J	AA	220 kohms,1/16W
R1415	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R1417,1418	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R1420	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R1424	VRS-CY1JB473J	J	AA	47 kohms,1/16W
R1430	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1435	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1440	VRS-CY1JB101J	J	AA	100 ohm,1/16W
R1441	VRS-CY1JB473J	J	AA	47 kohms,1/16W
R1443	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R1444	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1460	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1463	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1510	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R1511	VRS-CY1JB562J	J	AA	5.6 kohms,1/16W
R1512	VRS-TV2AB470J	J	AA	47 ohms,1/10W
R1513	VRS-CY1JB562J	J	AA	5.6 kohms,1/16W
R1515,1516	VRS-CY1JB182J	J	AA	1.8 kohms,1/16W
R1517,1518	VRS-CY1JB470J	J	AA	47 ohms,1/16W
R1520	VRS-CY1JB473J	J	AA	47 kohms,1/16W
R1521	VRS-CY1JB121J	J	AA	120 ohms,1/16W
R1523	VRS-CY1JB473J	J	AA	47 kohms,1/16W
R1526	VRS-CY1JB682J	J	AA	6.8 kohms,1/16W
R1527	VRS-CY1JB473J	J	AA	47 kohms,1/16W
R1529	VRS-CY1JB221J	J	AA	220 ohms,1/16W
R1532	VRS-CY1JB273J	J	AA	27 kohms,1/16W
R1533~1536	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R1537,1538	VRS-CY1JB221J	J	AA	220 ohms,1/16W
R1539	VRS-CY1JB121J	J	AA	120 ohms,1/16W
R1561	VRS-CY1JB473J	J	AA	47 kohms,1/16W
R1601	VRS-CY1JB123F	J	AA	12 kohms,1/16W
R1605	VRS-CY1JB123F	J	AA	12 kohms,1/16W
R1612	VRS-CY1JB563J	J	AA	56 kohms,1/16W
R1614	VRS-CY1JB333J	J	AA	33 kohms,1/16W

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
R1616	VRS-CY1JB123J	J	AA	12 kohms,1/16W
R1618	VRS-CY1JB223J	J	AA	22 kohms,1/16W
R1621	VRS-CY1JB682J	J	AA	6.8 kohms,1/16W
R1622,1623	VRS-CY1JB223J	J	AA	22 kohms,1/16W
R1624	VRS-CY1JB682J	J	AA	6.8 kohms,1/16W
R1701	VRS-CY1JB154J	J	AA	150 kohms,1/16W
R1702	VRS-CY1JB124J	J	AA	120 kohms,1/16W
R1703	VRS-CY1JB102F	J	AA	1 kohm,1/16W
R1704	VRS-CY1JB332F	J	AA	3.3 kohms,1/16W
R1705	VRS-CY1JB821J	J	AA	820 ohms,1/16W
R1708	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R1711	VRS-TV2AB120J	J	AA	12 ohms,1/10W
R1712	VRS-CY1JB273J	J	AA	27 kohms,1/16W
R1714	VRS-TV2AB120J	J	AA	12 ohms,1/10W
R1716	VRS-CY1JB104J	J	AA	100 kohm,1/16W
R1801	VRS-CY1JB271J	J	AA	270 ohms,1/16W
R1802	VRS-CY1JB563J	J	AA	56 kohms,1/16W
R1803	VRS-CY1JB333J	J	AA	33 kohms,1/16W
R1804	VRS-CY1JB391J	J	AA	390 ohms,1/16W
R1805	VRS-CY1JB271J	J	AA	270 ohms,1/16W
R1806	VRS-TQ2BB1R0J	J	AA	1 ohm,1/8W
R1807	VRS-CY1JB273J	J	AA	27 kohms,1/16W
R1808	VRS-CY1JB182J	J	AA	1.8 kohms,1/16W
R1809	VRS-TQ2BB1R0J	J	AA	1 ohm,1/8W
R1811	VRS-TQ2BB1R0J	J	AA	1 ohm,1/8W
R1930	VRS-TV2AB391J	J	AA	390 ohms,1/10W
R1931	VRS-TV2AB561J	J	AA	560 ohms,1/10W
R1932	VRS-TV2AB121J	J	AA	120 ohms,1/10W
R1933	VRS-TV2AB271J	J	AA	270 ohms,1/10W
RA100,101	VRS-CY1JB222J	J	AA	2.2 kohms,1/16W
RA102,103	VRS-CY1JB203J	J	AA	20 kohms,1/16W
RA104,105	VRS-CY1JB753D	J	AA	75 kohms,1/16W
RA108,109	VRS-CY1JB753D	J	AA	75 kohms,1/16W
RA112~115	VRS-CY1JB222J	J	AA	2.2 kohms,1/16W
RA116	VRS-CY1JB103J	J	AA	10 kohm,1/16W
RA117~120	VRS-CY1JB224J	J	AA	220 kohms,1/16W
RA125,126	VRS-CY1JB222D	J	AA	2.2 kohms,1/16W
RA127~130	VRS-CY1JB561D	J	AB	560 ohms,1/16W
RA131,132	VRS-CY1JB222D	J	AA	2.2 kohms,1/16W
RA153	VRS-CY1JB102J	J	AA	1 kohm,1/16W
RA154	VRS-CY1JB152J	J	AA	1.5 kohms,1/16W
RA165~172	VRS-CY1JB101J	J	AA	100 ohm,1/16W
RA173,174	VRS-CY1JB822J	J	AA	8.2 kohms,1/16W
RA175,176	VRS-CY1JB222J	J	AA	2.2 kohms,1/16W
RA177,178	VRS-CY1JB221J	J	AA	220 ohms,1/16W
RA179,180	VRS-CY1JB331J	J	AA	330 ohms,1/16W
RA181~184	VRS-CY1JB124D	J	AA	120 kohms,1/16W
RA202	VRS-CY1JB102J	J	AA	1 kohm,1/16W
RA280,281	VRS-CY1JB821D	J	AA	820 ohms,1/16W
RA282~285	VRS-CY1JB121D	J	AB	120 ohms,1/16W
RA286,287	VRS-CY1JB821D	J	AA	820 ohms,1/16W
RA301~304	VRS-CY1JB100J	J	AA	10 ohm,1/16W
RA305~308	VRS-TV2AB100J	J	AA	10 ohm,1/10W
RA311~314	VRS-TV2AB100J	J	AA	10 ohm,1/10W
RA315~318	VRS-CY1JB100J	J	AA	10 ohm,1/16W
RA321~324	VRS-CY1JB100J	J	AA	10 ohm,1/16W
RA325~328	VRS-TV2AB100J	J	AA	10 ohm,1/10W
RA331~334	VRS-TV2AB100J	J	AA	10 ohm,1/10W
RA335~338	VRS-CY1JB100J	J	AA	10 ohm,1/16W
RA339	VRS-CY1JB473J	J	AA	47 kohms,1/16W
RA340,341	VRS-VV3LA470J	J	AC	47 ohms,1W
RA342	VRS-CY1JB103J	J	AA	10 kohm,1/16W
RD02,03	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RD04,05	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RD06	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RD07~11	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RD12~14	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RD15,16	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RD17	VRD-ST2CD222J	J	AA	2.2 kohms,1/6W
RD18,19	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RD20,21	VRD-ST2CD222J	J	AA	2.2 kohms,1/6W
RD22	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RD23	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RD24~28	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RD29	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RD31~37	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RD39	VRD-MN2BD821J	J	AA	820 ohms,1/8W
RD41,42	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RD43,44	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RD45,46	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RD47	VRD-ST2CD122J	J	AA	1.2 kohms,1/6W
RD49	VRD-MN2BD561J	J	AA	560 ohms,1/8W
RD50	VRD-ST2CD224J	J	AA	220 kohms,1/6W
RD51	VRD-MN2BD103J	J	AA	10 kohm,1/8W
RD52,53	VRD-ST2CD222J	J	AA	2.2 kohms,1/6W
RD56	VRD-MN2BD180J	J	AA	18 ohms,1/8W
RD57	VRD-ST2CD220J	J	AA	22 ohms,1/6W
RD60	VRD-MN2BD103J	J	AA	10 kohm,1/8W
RD61	VRD-ST2CD123J	J	AA	12 kohms,1/6W
RD62,63	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RD64	VRD-MN2BD103J	J	AA	10 kohm,1/8W
RD66,67	VRD-MN2BD103J	J	AA	10 kohm,1/8W
RD69	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RD74,75	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
RD76	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
RD77	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
RD78	VRD-MN2BD182J	J	AA	1.8 kohms,1/8W
RD79	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
RD81	VRD-MN2BD822J	J	AA	8.2 kohms,1/8W
RD82	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
RD83	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RD85	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RD86	VRD-ST2CD122J	J	AA	1.2 kohms,1/6W
RD87	VRD-ST2CD562J	J	AA	5.6 kohms,1/6W
RD88	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RD90	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RD91	VRD-ST2CD122J	J	AA	1.2 kohms,1/6W
RD92	VRD-MN2BD152J	J	AA	1.5 kohms,1/8W
RD93	VRD-ST2CD182J	J	AA	1.8 kohms,1/6W
RD94	VRD-ST2CD272J	J	AA	2.7 kohms,1/6W
RD95	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RD96	VRD-ST2CD122J	J	AA	1.2 kohms,1/6W
RD97	VRD-ST2CD152J	J	AA	1.5 kohms,1/6W
RD98	VRD-ST2CD182J	J	AA	1.8 kohms,1/6W
RD99	VRD-ST2CD272J	J	AA	2.7 kohms,1/6W
RE01	VRD-ST2CD392J	J	AA	3.9 kohms,1/6W
RE02~17	VRD-MN2BD473J	J	AA	47 kohms,1/8W
RE18	VRD-MN2BD271J	J	AA	270 ohms,1/8W
RE19,20	VRD-MN2BD181J	J	AA	180 ohms,1/8W
RE28,29	VRD-MN2BD681J	J	AA	680 ohms,1/8W
RE30,31	VRD-MN2BD331J	J	AA	330 ohms,1/8W
RE32	VRD-ST2CD104J	J	AA	100 kohm,1/6W
RE35	VRD-MN2BD681J	J	AA	680 ohms,1/8W
RE36,37	VRD-MN2BD151J	J	AA	150 ohms,1/8W
RE38	VRD-MN2BD224J	J	AA	220 kohms,1/8W
RE39	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RE40	VRD-MN2BD332J	J	AA	3.3 kohms,1/8W
RE41	VRD-ST2CD473J	J	AA	47 kohms,1/6W
RE42,43	VRD-MN2BD332J	J	AA	3.3 kohms,1/8W
RE44	VRD-ST2CD473J	J	AA	47 kohms,1/6W
RE45	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RE46	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
RE47	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
RE48	VRD-MN2BD223J	J	AA	22 kohms,1/8W
RE50	VRD-MN2BD103J	J	AA	10 kohm,1/8W
RE51	VRD-ST2CD223J	J	AA	22 kohms,1/6W
RP01,02	VRS-CY1JB223J	J	AA	22 kohms,1/16W
RP03,04	VRS-CY1JB472J	J	AA	4.7 kohms,1/16W
RP05,06	VRS-CY1JB104J	J	AA	100 kohm,1/16W
RP07,08	VRS-CY1JB472J	J	AA	4.7 kohms,1/16W
RP11,12	VRS-CY1JB102J	J	AA	1 kohm,1/16W
RP13,14	VRS-CY1JB682J	J	AA	6.8 kohms,1/16W
RP15,16	VRS-CY1JB472J	J	AA	4.7 kohms,1/16W
RP17,18	VRS-CY1JB562J	J	AA	5.6 kohms,1/16W
RP19,20	VRS-CY1JB222J	J	AA	2.2 kohms,1/16W
RP23	VRS-CY1JB103J	J	AA	10 kohm,1/16W
RP24	VRS-CY1JB104J	J	AA	100 kohm,1/16W
RP25~28	VRD-ST2EE470J	J	AA	47 ohms,1/4W
RP31	VRS-CY1JB472J	J	AA	4.7 kohms,1/16W
RS01	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RS02	VRS-CY1JB102J	J	AA	1 kohm,1/16W
RS03,04	VRS-CY1JB472J	J	AA	4.7 kohms,1/16W
RS05,06	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RS07~09	VRS-CY1JB104J	J	AA	100 kohm,1/16W
RS10	VRD-ST2CD104J	J	AA	100 kohm,1/6W
RS11,12	VRS-CY1JB821J	J	AA	820 ohms,1/16W
RS13,14	VRS-CY1JB472J	J	AA	4.7 kohms,1/16W
RS17	VRS-CY1JB104J	J	AA	100 kohm,1/16W
RS18,19	VRD-ST2EE221J	J	AA	220 ohms,1/4W
RS23,24	VRS-CY1JB104J	J	AA	100 kohm,1/16W
RS25,26	VRS-CY1JB103J	J	AA	10 kohm,1/16W
RT26	VRS-CY1JB102J	J	AA	1 kohm,1/16W
RT28~30	VRS-CY1JB102J	J	AA	1 kohm,1/16W
RT32	VRD-ST2CD103J	J	AA	10 kohm,1/6W

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
RT33,34	VRD-ST2CD563J	J	AA	56 kohms,1/6W
RT35~37	VRS-CY1JB224J	J	AA	220 kohms,1/16W
RT39	VRS-CY1JB224J	J	AA	220 kohms,1/16W
RU01,02	VRS-CY1JB102J	J	AA	1 kohm,1/16W
RU05~08	VRS-CY1JB102J	J	AA	1 kohm,1/16W
RU09,10	VRS-CY1JB272J	J	AA	2.7 kohms,1/16W
RU11,12	VRS-CY1JB102J	J	AA	1 kohm,1/16W
RU17,18	VRS-CY1JB273J	J	AA	27 kohms,1/16W
RU19,20	VRS-CY1JB153J	J	AA	15 kohms,1/16W
RU21,22	VRS-CY1JB471J	J	AA	470 ohms,1/16W
RU23,24	VRD-ST2CD102J	J	AA	1 kohm,1/6W
RU30~32	VRS-CY1JB102J	J	AA	1 kohm,1/16W
RU33,34	VRD-RT2HD221J	J	AA	220 ohms,1/2W
RU39,40	VRS-CY1JB470J	J	AA	47 ohms,1/16W
RU60	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RU61	VRS-CY1JB183J	J	AA	18 kohms,1/16W
RU70	VRS-CY1JB101J	J	AA	100 ohm,1/16W
RV44	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RV45	VRD-ST2CD222J	J	AA	2.2 kohms,1/6W
RV48	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RV49	VRD-MN2BD221J	J	AA	220 ohms,1/8W
RV50	VRD-ST2EE102J	J	AA	1 kohm,1/4W
RV51	VRD-MN2BD104J	J	AA	100 kohm,1/8W
RV53	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
RV54	VRD-MN2BD124J	J	AA	120 kohms,1/8W
RV55	VRD-MN2BD104J	J	AA	100 kohm,1/8W
RV56	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RV57	VRD-MN2BD104J	J	AA	100 kohm,1/8W
RV58	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
RV59,60	VRD-MN2BD223J	J	AA	22 kohms,1/8W
RV61~64	VRD-ST2CD153J	J	AA	15 kohms,1/6W
RV65,66	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
RV67	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RV68	VRD-MN2BD104J	J	AA	100 kohm,1/8W
RV69	VRD-ST2EE221J	J	AA	220 ohms,1/4W
RV70	VRD-MN2BD122J	J	AA	1.2 kohms,1/8W
RV71	VRD-MN2BD391J	J	AA	390 ohms,1/8W
RV72	VRD-MN2BD103J	J	AA	10 kohm,1/8W
RV73	VRN-RT2CC184F	J	AA	180 kohms,1/6W,Metal Film
RV74,75	VRD-ST2EE221J	J	AA	220 ohms,1/4W
RV76	VRN-RT2CC184F	J	AA	180 kohms,1/6W,Metal Film
RV78,79	VRN-RT2CC103F	J	AA	10 kohms,1/6W,Metal Film
RV80,81	VRN-RT2CC562F	J	AA	5.6 kohms,1/6W,Metal Film
RV82,83	VRN-RT2CC153F	J	AA	15 kohms,1/6W,Metal Film
RV84,85	VRS-VV3AAR20J	J	AB	0.2 ohms,1W
RV86	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RV87	VRD-ST2CD104J	J	AA	100 kohm,1/6W
RV88,89	VRN-RT2CC184F	J	AA	180 kohms,1/6W,Metal Film
RV90,91	VRN-RT2CC103F	J	AA	10 kohms,1/6W,Metal Film
RV92,93	VRN-RT2CC562F	J	AA	5.6 kohms,1/6W,Metal Film
RV94,95	VRN-RT2CC153F	J	AA	15 kohms,1/6W,Metal Film
RV96,97	VRS-VV3AAR20J	J	AB	0.2 ohms,1W
RV98	VRD-ST2EE221J	J	AA	220 ohms,1/4W

OTHER CIRCUITRY PARTS

BI02	QCNWN1775AWZZ	J	AC	Flat Wire,4Pin
BI1/CNS1	QCNWN1756AWZZ	J	AG	Connector Ass'y,7/7Pin
BI2/CNS2	QCNWN1757AWZZ	J	AH	Connector Ass'y,8/8Pin
BI3/CNS3	QCNWN1758AWZZ	J	AF	Connector Ass'y,6/6Pin
BI5/CNS5	QCNWN1760AWZZ	J	AE	Connector Ass'y,3/3Pin
BI102/CNS102	QCNWN1911AWZZ	J	AE	Connector Ass'y,2/2Pin
BI302/CNS302	QCNWN1772AWZZ	J	AG	Connector Ass'y,10/10Pin
BI303	QCNWN1897AWZZ	J	AD	Connector Ass'y,2/2Pin
BI800/CNS800	QCNWN1765AWZZ	J	AG	Connector Ass'y,7/7Pin
BI900/CNS900	QCNWN1762AWZZ	J	AE	Connector Ass'y,4/4Pin
⚠ BI901/CNS901	QCNWN1763AWZZ	J	AH	Connector Ass'y,2/2Pin
BIA106/CNSA106	QCNWN1788AWZZ	J	AF	Connector Ass'y,3/3Pin
BIA110/CNSA110	QCNWN1789AWZZ	J	AF	Connector Ass'y,4/4Pin
BIA111/CNSA111	QCNWN1790AWZZ	J	AE	Connector Ass'y,3/3Pin
BIA112/CNSA112	QCNWN1791AWZZ	J	AF	Connector Ass'y,5/5Pin
BID02	QCNWN1774AWZZ	J	AC	Flat Wire,3Pin
BID03	QCNWN1773AWZZ	J	AE	Flat Wire,6Pin
BID04/CNSD04	QCNWN1766AWZZ	J	AF	Connector Ass'y,4/4Pin
BIU01/CNSU01	QCNWN1761AWZZ	J	AE	Connector Ass'y,2/2Pin
CN902	92LCONE7P5268	J	AE	Plug,7Pin
CN1101	QCNCWYK28AFZZ	J	AH	Socket,28Pin
CN1300	QCNCM970BAFZZ	J	AD	Plug,2Pin
CN1401	QCNCWXC05AFZZ	J	AC	Socket,5Pin
CN1402	QCNCWXC06AFZZ	J	AD	Socket,6Pin
CN1501	QCNCWYR28AWZZ	J	AF	Socket,28Pin
CN1502	QCNCM970DAFZZ	J	AE	Socket,4Pin
CN1931	QCNCWXC05AFZZ	J	AC	Socket,5Pin
CN1932	QCNCWXC06AFZZ	J	AD	Socket,6Pin
CNP3	92LCONE6P53254	J	AC	Plug,6Pin
CNP5	92LCONE3P53253	J	AB	Plug,3Pin
CNP6	QCNCM704BAFZZ	J	AA	Plug,2Pin
CNP7	92LCONE2P53253	J	AB	Plug,2Pin
CNP8	QCNCM705DAFZZ	J	AB	Plug,4Pin
CNP102	QCNCM705BAFZZ	J	AA	Plug,2Pin
CNP601	QCNCWZP22AWZZ	J	AD	Socket,22Pin
CNP602	QCNCWZP16AWZZ	J	AD	Socket,16Pin
CNP603	QCNCWZP30AWZZ	J	AE	Socket,30Pin
CNP801	92LCONE-3P5267	J	AB	Plug,3Pin
CNP802	92LCONE5P53253	J	AB	Plug,5Pin
⚠ CNP901	QCNCM049BAWZZ	J	AC	Plug,2Pin
CNPD01	QCNCWZP22AWZZ	J	AD	Socket,22Pin
CNPD02	QCNCWZP18AWZZ	J	AD	Socket,18Pin
CNPD03	QCNCWZP16AWZZ	J	AD	Socket,16Pin
CNPD04	92LCONE5P53253	J	AB	Plug,5Pin
CNPD1	QCNCWZ018AWZZ	J	AD	Socket,18Pin
CNPP01	92LCONE3P53253	J	AB	Plug,3Pin
CNPU02	QCNCWZP30AWZZ	J	AE	Socket,30Pin
CNPU03	92LCONEAP53253	J	AC	Plug,10Pin
CNPU04	QCNCWYW28AWZZ	J	AK	Socket,28Pin
CNPV97	QCNCM705CAFZZ	J	AA	Plug,3Pin
CNPV98	92LCONE4P53253	J	AB	Plug,4Pin
CNPV99	92LCONE-4P5267	J	AB	Plug,4Pin
CNS6	QCNWN1759AWZZ	J	AC	Connector Ass'y,2Pin
⚠ CORA01~03	RCORF0018AWZZ	J	AG	Core
CW1501	QCNWN1549AWZZ	J	AQ	Flat Cable,28Pin
CW1502A/B	QCNWN1515AWZZ	J	AK	Connector Ass'y,4/4Pin
CW1931	QCNWN1512AWZZ	J	AC	Flat Cable,5Pin
CW1932	QCNWN1513AWZZ	J	AC	Flat Cable,6Pin
⚠ F801,802	QFS-D502CAWNI	J	AC	Fuse,T5A L 250V
⚠ F803	QFS-D252CAWNI	J	AC	Fuse,T2.5A L 250V
FE301	RTUNS0016AWZZ	J	AX	FM Front End
FLD01	VVKHNA13LS3-1	J	BB	FL Display
FWD01	QCNWN1769AWZZ	J	AG	Flat Cable,22Pin
FWD02	QCNWN1770AWZZ	J	AG	Flat Cable,16Pin
FWD03	QCNWN1771AWZZ	J	AF	Flat Cable,18Pin
FWM01	QCNWN1768AWZZ	J	AF	Flat Cabel,30Pin
JHP01	QJAKM0017AWZZ	J	AF	Jack,Headphones
JTU01	QSOCJ0221AWZZ	J	AD	Jack,AUX Input
M01(203-7)	RMOTV0039AWZZ	J	AM	CD Lid Motor
M97	RMOTV0035AWZZ	J	AY	Fan Motor
M901	RMOTV0038AWZZ	J	AT	MD Spindle Motor Ass'y
M902	92LMTR3167BASY	J	AP	MD Sled Motor Ass'y
M903	92LMTR3167AASY	J	AN	MD Loading Motor Ass'y
NM801	92LMTR1854BASY	J	AP	Motor with Gear [Sled]
NM802	92LMTR3515CASY	J	BA	Motor with Chassis [Spindle]
NSW801	QSW-F9001AW01	J	AD	Switch,Push Type [Pickup In]
⚠ RL800	RRLYD0011AWZZ	J	AE	Relay
⚠ RL900	RRLYD0004SJZZ	J	AG	Relay
⚠ RLV99	RRLYD0014AWZZ	J	AK	Relay
RMD01	VHLN64H380A-1	J	AK	Remote Sensor,N64H380A
SO301A	QTANC0302AWZZ	J	AF	Terminal,Antenna
⚠ SO900	QSOCA0212AWZZ	J	AD	Socket,AC Input
SOV99	QTANA0415AWZZ	J	AD	Terminal,Speaker
SW01	QSW-M0007AWZZ	J	AD	Switch,Push Type [CD Lid Close]
SW02	QSW-M0007AWZZ	J	AD	Switch,Push Type [CD Lid Open]
SW1930	QSW-P0011AWZZ	J	AD	Switch,Push Type [Write Pro]
SW1931	QSW-P0012AWZZ	J	AD	Switch,Push Type [Disc Media]
SW1932	QSW-M0007AWZZ	J	AD	Switch,Push Type [Loading]
SW1933	QSW-M0007AWZZ	J	AD	Switch,Push Type [Record]
SW1934	QSW-M0007AWZZ	J	AD	Switch,Push Type [Play]
SW1936	QSW-M0157AFZZ	J	AD	Switch,Push Type [Lead In]
SWD02	92LSWICHT1663T	J	AC	Switch,Key Type [On/Stand-by]
SWD03	92LSWICHT1663T	J	AC	Switch,Key Type [MD Eject]
SWD04	92LSWICHT1663T	J	AC	Switch,Key Type [Erase]
SWD07	92LSWICHT1663T	J	AC	Switch,Key Type [CD Eject]
SWD09	92LSWICHT1663T	J	AC	Switch,Key Type [Volume Up]
SWD10	92LSWICHT1663T	J	AC	Switch,Key Type [Volume Down]
SWD11	92LSWICHT1663T	J	AC	Switch,Key Type [Skip Up]
SWD12	92LSWICHT1663T	J	AC	Switch,Key Type [CD Play]
SWD13	92LSWICHT1663T	J	AC	Switch,Key Type [CD Stop]
SWD14	92LSWICHT1663T	J	AC	Switch,Key Type [Skip Down]
SWD15	92LSWICHT1663T	J	AC	Switch,Key Type [MD Play]
SWD16	92LSWICHT1663T	J	AC	Switch,Key Type [MD Stop]
SWD17	92LSWICHT1663T	J	AC	Switch,Key Type [Play Mode]
SWD18	92LSWICHT1663T	J	AC	Switch,Key Type [Record Mode]
SWD19	92LSWICHT1663T	J	AC	Switch,Key Type [MD Record]
SWD20	92LSWICHT1663T	J	AC	Switch,Key Type [AUX/Demo]

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
SWD21	92LSWICHT1663T	J	AC	Switch,Key Type [Tuner/Band]
SWD22	92LSWICHT1663T	J	AC	Switch,Key Type [+10]

MD MECHANISM PARTS

2	LCHSM0089AWZZ	J	AH	Drive Chassis (A)
3	LCHSM0090AWZZ	J	AH	Drive Chassis (B)
4	LHLDX3009AWM1	J	AG	Cartridge Holder Ass'y
5	MLEVF0051AWM1	J	AK	Slider Lever Ass'y
7	MLEVF0046AWFW	J	AE	Arm,Holder
8	MLEVF0047AWFW	J	AC	Plate,Switch
9	MLEVF0054AWFW	J	AC	Arm,Head Up Shift
10	MLEVP0095AWZZ	J	AC	Lever,Cam Plate
12	MSPRD0132AWFJ	J	AB	Spring,Loading
14	MSPRP0030AWFJ	J	AB	Spring,Grip
15	MSPRP0031AWFJ	J	AC	Spring,Shaft
16	MSPRT0031AWFJ	J	AC	Spring,Loading Arm
17	MSPRT0032AWFJ	J	AB	Spring,Shift Arm
18	NGERH0085AWZZ	J	AC	Gear,Loading (A)
19	NGERH0086AWZZ	J	AB	Gear,Middle (A)
20	NGERH0087AWZZ	J	AB	Gear,Middle (B)
21	NGERH0088AWZZ	J	AC	Gear,Middle (C)
22	NGERH0089AWZZ	J	AC	Gear,Middle (D)
24	NGERR0004AWZZ	J	AC	Rack,Grip
27	NSFTD0006AWM1	J	AG	Drive Shaft Ass'y
28	NSFTM0019AWFW	J	AC	Shaft,Pickup Slide
30	PCOVS3029AWFW	J	AG	Cover,Shield,Top
31	PCOVS3033AWFW	J	AF	Cover,Shield,Side
32	PCOVS3031AWFW	J	AG	Cover,Shield,Bottom
33	PCUSG0045AWZZ	J	AC	Cushion,Shield Cover
34	RCILH0113AFZZ	J	AS	Magnetic Head
⚠ 35	RCTRH8198AFZZ	J	BM	MD Pickup Unit Ass'y
36	MSPRT0034AWFJ	J	AB	Spring,Ground
501	LX-BZ0040AWZZ	J	AB	Screw,ø1.4×1.5mm
502	LX-BZ0046AWZZ	J	AB	Screw,ø2×2mm
503	LX-BZ0800AFZZ	J	AA	Screw,ø1.4×2.5mm
504	LX-BZ0883AFZZ	J	AB	Screw,ø1.7×5mm
505	LX-JZ0020AWZZ	J	AB	Screw,ø1.4×3mm
506	LX-JZ0022AWZZ	J	AB	Screw,ø1.7×6mm
507	LX-JZ0024AWZZ	J	AB	Screw,ø1.4×4.5mm
509	XBPSD20P03K00	J	AB	Screw,ø2×3mm
510	XSPSN17P03K00	J	AB	Screw,ø1.7×3mm
511	XWSSD14-05000	J	AA	Washer,ø1.4×0.5mm
512	LX-BZ0846AFZZ	J	AB	Screw,ø1.7×3mm
513	LX-JZ0025AWZZ	J	AB	Screw,ø1.4×5mm
M901	RMOTV0038AWZZ	J	AT	MD Spindle Motor Ass'y
M902	92LMTR3167BASY	J	AP	MD Sled Motor Ass'y
M903	92LMTR3167AASY	J	AN	MD Loading Motor Ass'y
SW1930	QSW-P0011AWZZ	J	AD	Switch,Push Type [Write Pro]
SW1931	QSW-P0012AWZZ	J	AD	Switch,Push Type [Disc Media]
SW1932	QSW-M0007AWZZ	J	AD	Switch,Push Type [Loading]
SW1933	QSW-M0007AWZZ	J	AD	Switch,Push Type [Record]
SW1934	QSW-M0007AWZZ	J	AD	Switch,Push Type [Play]
SW1936	QSW-M0157AFZZ	J	AD	Switch,Push Type [Lead In]

CD MECHANISM PARTS

301	NGERH0011AWZZ	J	AC	Gear,Middle
302	NGERH0012AWZZ	J	AC	Gear,Drive
303	MLEVP0010AWZZ	J	AC	Rail,Guide
304	NSFTM0020AWFW	J	AD	Shaft,Guide
⚠306	92LHPC1LXASY	J	BD	Pickup Unit Ass'y
306- 1	————		—	Pickup Unit (Not Replacement Item)
306- 2	NGERR0043AFZZ	J	AC	Gear,Rack
306- 3	MSPRC0961AFZZ	J	AA	Spring,Rack
701	XBSSD26P06000	J	AA	Screw,ø2.6×6mm
702	XHBSD20P05000	J	AA	Screw,ø2×5mm
703	XBBSD20P03000	J	AA	Screw,ø2×3mm
704	LX-WZ1070AFZZ	J	AA	Washer,ø1.5×ø3.8×0.25mm
NM801	92LMTR1854BASY	J	AP	Motor with Gear [Sled]
NM802	92LMTR3515CASY	J	BA	Motor with Chassis [Spindle]
NSW801	QSW-F9001AW01	J	AD	Switch,Push Type [Pickup In]

CABINET PARTS

201	92LCAB3666AASY	J		Front Panel Ass'y [BL]
201	92LCAB3667AASY	J		Front Panel Ass'y [GR]
201- 1	HPNLC1285AWSA	J	AV	Front Panel
201- 2	HDECQ0724AWSA	J	AQ	Decoration Plate [BL]
201- 2	HDECQ0724AWSB	J	AQ	Decoration Plate [GR]
201- 3	HDECQ0726AWSA	J	AL	Decoration Plate,FL Display [BL]
201- 3	HDECQ0726AWSB	J	AL	Decoration Plate,FL Display [GR]
201- 4	JKNBZ0761AWSA	J	AN	Button,Operation
201- 5	JKNBZ0759AWSA	J	AF	Button,On/Stand-by
201- 7	GDORF0064AWSH	J	AF	MD Door
201- 8	LANGT0086AWFW	J	AC	Bracket,MD Door Spring
201- 9	MSPRT0022AWZZ	J	AB	Spring,MD Door
201-10	PCUSG0060AWZZ	J	AB	Cushion,Operation Button Lid
201-11	PCUSG0061AWZZ	J	AB	Cushion,CD Lid
201-12	PSHEZ0111AWZZ	J	AF	Sheet,Operation Lid
201-13	PCUSG0071AWZZ	J	AA	Cushion,Magnet
201-14	LANGK0248AWFW	J	AD	Bracket,Open/Close Switch PWB
201-16	PSHET0058AWZZ	J	AB	Sheet,Magnet
201-17	HDECQ0725AWSA	J	AT	Decoration Plate,CD Lid [BL]
201-17	HDECQ0725AWSB	J	AT	Decoration Plate,CD Lid [GR]
201-18	LHLDZ1292AWSA	J	AK	Holder,CD Lid
201-19	GDORF0094AWSA	J	AN	CD Lid
201-20	LANGF0051AWF2	J	AN	Bracket,CD Lid
201-21	HDECA0010AWSA	J	AL	Decoration Plate,Operation Lid
201-22	GDORF0095AWSA	J	AM	Operation Lid
201-23	LANGK0243AWFN	J	AC	Bracket,Operation Lid Magnet
201-24	PMAGZ0002AWZZ	J	AD	Magnet,Operation Button Lid
201-25	PSHEP0056AWZZ	J	AB	Sheet,Magnet Bracket
203	DUNTZ3666AW01	J		CD Lid Gear Unit Ass'y
203- 1	LHLDZ1342AWZZ	J		Gear Box,A
203- 2	LHLDZ1343AWZZ	J		Gear Box,B
203- 3	NGERH0132AWZZ	J	AD	Gear A,Drive
203- 4	NGERH0133AWZZ	J	AD	Gear B,Drive
203- 5	NGERH0151AWZZ	J		Gear C,Drive
203- 6	NGERH0150AWZZ	J		Gear,Motor
203- 7(M01)	RMOTV0043AWZZ	J		CD Lid Motor
203- 8	PFLT-0052AWZZ	J		Felt A
204	GITAR0663AWSA	J	AM	Rear Panel [Except for U.K.] [BL]
204	GITAR0707AWSA	J		Rear Panel [For U.K.] [BL]
204	GITAR0708AWSA	J	AM	Rear Panel [Except for U.K.][GR]
204	GITAR0709AWSA	J		Rear Panel [For U.K.] [GR]
205	GCABB1219AWSA	J	AW	Rear Cabinet
206	LANGK0244AWFW	J	AE	Bracket,CD Mechanism,A
207	LANGK0245AWFW	J	AD	Bracket,CD Mechanism,B
208	LANGK0246AWFW	J	AF	Bracket,CD Mechanism,C
209	LANGK0247AWFW	J	AE	Bracket,CD Mechanism,D
210	LANGK0259AWFW	J	AE	Bracket,Motor Fan,C
211	LANGT0088AWFW	J	AE	Bracket,Sub Trans PWB
212	LANGT0089AWFW	J	AG	Bracket,AMP.,Bottom
213	LANGT0090AWFW	J	AG	Bracket,Motor Fan,A
214	PSHEP0062AWZZ	J	AF	Cover,Sub Transformer
215	LANGT0107AWFW	J	AD	Bracket,Motor Fan,B
216	LCHSM0131AWFW	J		Main Chassis
217	LHLDZ1293AWSA	J	AC	Holder,Decoration Plate,A
218	LHLDZ1294AWSA	J	AC	Decoration Plate,B
219	LHLDZ1295AWSA	J	AD	Holder,LED
220	LHLDZ1297AWSA	J	AE	Holder,FL Display
221	LHLDZ1355AWSA	J		Holder,MD,Left
222	LHLDZ1300AWSA	J	AD	Holder,MD,Right
223	PCOVP1001AWSA	J	AE	Cover,CD Mechanism
224	PCOVZ1017AW00	J	AF	Cover,Light
225	PCUSG0008AWZZ	J	AB	Cushion,Mechanism
226	PCUSG0022AWZZ	J	AB	Cushion,Leg
227	PRDAR0178AWFW	J	AN	Heat Sink,Power PWB
228	PSHEP0054AWZZ	J	AE	Cover,PWB
229	PSHEP0055AWZZ	J	AD	Sheet,Flat Cable
230	PSPAS0003AWZZ	J	AC	Spacer,Boss
231	PSPAZ0036AWZZ	J	AC	Spacer,CD Boss
⚠ 232	QFSHD0001AWZZ	J	AB	Holder,Fuse
⚠ 233	QLUGP0001AWZZ	J	AC	Lug Terminal
234	92LMCUSN1524A	J	AD	Cushion,CD Mechanism
235	92LNBAND1318A	J	AA	Nylon Band,80mm
236	PCUSS0050AWZZ	J	AB	Cushion,CD
237	TCAUS0028AWZZ	J	AB	Label,Laser Class 3B
238	HDECQ0654AWSA	J	AK	Decoration Plate,A
239	PSHEP0057AWZZ	J	AF	Sheet,FL Display Cover
240	JKNBZ0760AWSA	J	AF	Button,CD Eject
241	PSLDM3079AWFE	J	AQ	Shield Case A,AMP.
242	PSLDM3080AWFW	J	AK	Shield Case B,AMP.

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
243	PRDAR0186AWFW	J	AH	Heat Sink B,AMP.
244	LHLDZ1325AWZZ	J	AC	Holder,Edge
245	PRDAR0185AWFW	J	AK	Heat Sink A,AMP.
246	PSLDM3081AWZZ	J	AH	Shield A,AMP.
247	PSHEP0052AWZZ	J	AD	Insulation Sheet A,AMP.
248	PSHEP0053AWZZ	J	AD	Insulation Sheet B,AMP.
249	PCUSG0077AWZZ	J	AH	Sheet,AMP.Shield Case B
250	QCNWN1944AWZZ	J		Lead Wire with Lug
601	LX-BZ0057AWFN	J	AB	Screw,Special
602	LX-EZ0005AWFD	J	AA	Screw,ø2.6×10mm
603	LX-EZ0029AWFN	J	AB	Screw,Special
604	LX-HZ0082AFZZ	J	AA	Screw,ø4×8mm
605	LX-JZ0010AFFD	J	AA	Screw,ø3×10mm
606	XBBSD20P05000	J	AA	Screw,ø2×5mm
607	XEBSD20P10000	J	AA	Screw,ø2×10mm
608	XBPSD30P06KS0	J	AA	Screw,ø3×6mm
609	XEBSD30P08000	J	AA	Screw,ø3×8mm
610	XEBSD30P10000	J	AA	Screw,ø3×10mm
611	XEBSD30P12000	J	AA	Screw,ø3×12mm
612	XHBSD20P05000	J	AA	Screw,ø2×5mm
613	XHSSD30P06000	J	AA	Screw,ø3×6mm
614	XJBSD30P06000	J	AA	Screw,ø3×6mm
615	XHBSD30P20000	J	AA	Screw,ø3×20mm
616	XHBSD30P06000	J	AA	Screw,ø3×6mm
617	XJBSD30P08000	J	AA	Screw,ø3×8mm
618	XJBSD30P14000	J	AA	Screw,ø3×14mm
619	XJBSD30P25000	J	AB	Screw,ø3×25mm
620	XJBSF30P08000	J	AA	Screw,ø3×8mm
621	XJBSN30P08000	J	AA	Screw,ø3×8mm
622	XWHSD32-10130	J	AA	Washer,ø3.2×ø13×1.0mm
623	XWSSN32-07000	J	AB	Washer,ø3.2mm
624	LX-WZ7003AWZZ	J	AB	Washer,ø3.2×ø6×0.5mm
625	LX-WZ7004AWZZ	J		Washer,ø3.2×ø6×0.3mm

ACCESSORIES/PACKING PARTS

⚠	QACCE0007AW00	J	AH	AC Power Supply Cord [Except for U.K.]
	SPAKF0005AWZZ	J		Box,Operation Manual [Except for U.K.]
	SPAKF0006AWZZ	J		Box,Accessories [Except for U.K.]
	TINSZ0658AWZZ	J	AU	Operation Manual [Except for U.K.]
	92LBAG1460C1	J	AB	Polyethylene Bag,Accessories [Except for U.K.]
⚠1	QACCB0008AW00	J	AW	AC Power Supply Cord[For U.K.]
2	QANTL0012AWZZ	J	AS	AM Loop Antenna
3	RRMCG0256AWSA	J	AY	Remote Control
4	SPAKA0274AWZZ	J	AG	Packing Add.,Left
5	SPAKA0275AWZZ	J	AG	Packing Add.,Right
6	SPAKC1177AWZZ	J		Packing Case [BL]
6	SPAKC1179AWZZ	J	AT	Packing Case [GR]
7	SPAKZ0760AWZZ	J		Pad,Accessories
8	SPAKZ0686AWZZ	J	AD	Packing Add.,Front
9	SPAKZ0693AWZZ	J	AE	Packing Add.,Center
10	SSAKA0007AWZZ	J	AB	Polyethylene Bag,Accessories [For U.K.]
11	SSAKH0045AWZZ	J	AD	Polyethylene Bag,Unit
12	92LBAG1770A	J	AB	Polyethylene Bag,AC Power Supply Cord [For U.K.Only]
13	92LFB1616	J	AL	Non-slip Sheet for Speaker×8
14	TCAUZ0091AWZZ	J		Sheet,Fan Caution
15	TGAN-3170UMZZ	J	AE	Warranty Card [For U.K.Only]
16	TINSE0352AWZZ	J	AH	Operation Manual [For U.K.]
17	TINSE0353AWZZ	J	AC	Quick Guide [For U.K.Only]
18	TLABN0112AWZZ	J	AA	Label,Serial Number
19	TLABE0505AWZZ	J		Label,Bar Code [BL]
19	TLABE0506AWZZ	J		Label,Bar Code [GR]
20	92LFANT1535A	J	AF	FM Antenna
21	SPAKZ0752AWZZ	J	AC	Protection Sheet

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION

P.W.B. ASSEMBLY (Not Replacement Item)

PWB-A1~4	92LPWB3666MANS	J	—	Main/Tuner/CD/Switch (Combined Ass'y)
⚠ PWB-B1~8	92LPWB3666DPLS	J	—	Display/Power/Main Trans/ Sub Trans/CD Eject/ Headphones/LED/Spacer (Combined Ass'y)
PWB-C	92LPWB3666AMPS	J	—	1 Bit Amp.
PWB-D	QPWBF0027AWZZ	J	AD	CD Motor (PWB Only)
PWB-E	92LPWB3515MDS	J	—	MD Main
PWB-F1,2	QPWBF0554AWZZ	J	AD	MD Mechanism Switch/ MD Loading Motor (PWB Only)

OTHER SERVICE PARTS

	QCNWK0108AFZZ	J	AL	Extension Flat Cable (28Pin)
	QCNWK0109AFZZ	J	AH	Extension Flat Cable (5Pin)
	QCNWK0129AFZZ	J	AG	Extension Connector (2Pin)
	QCNWK0130AFZZ	J	AP	Extension Flat Cable (6Pin)
	RRCDT0101AFZZ	J	CB	Test Disc,High Reflection
	RRCDT0103AFZZ	J	BK	Head Adjusting Transparent Disc
	RUNTK0532AFZZ	J	BK	Extension PWB for Service
	UDSKA0004AFZZ	J	AZ	CD Pickup Lens Cleaner Disc
	88GMMD-213AS	J	BT	Low Reflection Disc, Pre-Adjustment Mini Disc (TEAC Test MD)
	88GMMD-318	J	BF	Low Reflection Disc, Pre-Adjustment Mini Disc (TEAC Test MD)

CP-CX1H

SPEAKER BOX PARTS

901	92LDLAS1683	J	AZ	Net Frame Ass'y [GR]
901	92LDLAS1683A	J	AZ	Net Frame Ass'y [BL]
902	92LBA703	J	AZ	Front Panel
903	92LDL1693A	J	AD	Speaker Duct
904	92LBX665	J	BD	Rear Cabinet
905	92LWS2944	J	AC	Net Catcher
906	92LWS2951	J	AD	Cushion,Rear Cabinet
907	92LWS2952	J	AC	Cushion,Front Panel
908	92LWS2953	J	AC	Tape,Tweeter Ring
909	92LWS2958A	J	AD	Cushion,Tweeter
910	92LWS2558A-U	J	AC	Cushion,Woofer
911	92LDL1684	J	AM	Ring,Tweeter
912	92LTP660A	J	AG	Speaker Terminal
913	92LNTAS283	J	AV	Network Ass'y
914	92LNP-Y220BL	J		Label,Specifications [BL]
914	92LNP-Y220GR	J		Label,Specifications [GR]
915	92LLC1107	J	AH	Bracket,Speaker
916	92LAS510	J	AL	Absorber
917	92LSRTD4B16FBC	J	AB	Screw,ø4×16mm
918	92LSRTD3B12FBC	J	AB	Screw,ø3×12mm
919	92LSRTD3W12F	J	AB	Screw,ø3×12mm
920	92LSRTD4B16FNI	J		Screw,ø4×16mm
921	92LSRTD4B12F	J	AB	Screw,ø4×12mm
SP1,2	92LW1259B0N	J	BB	Woofer
SP3,4	92LTW2122A1	J		Tweeter

ACCESSORIES/PACKING PARTS

1	92LPCE02221APA	J	AH	Packing Add.,Top,Speaker
2	92LPCE02221APB	J	AH	Packing Add.,Bottom,Speaker
3	92LTB693	J	AE	Polyethylene Bag,Speaker
4	92LFB1590	J	AR	Speaker Cord Ass'y

SD-CX1H

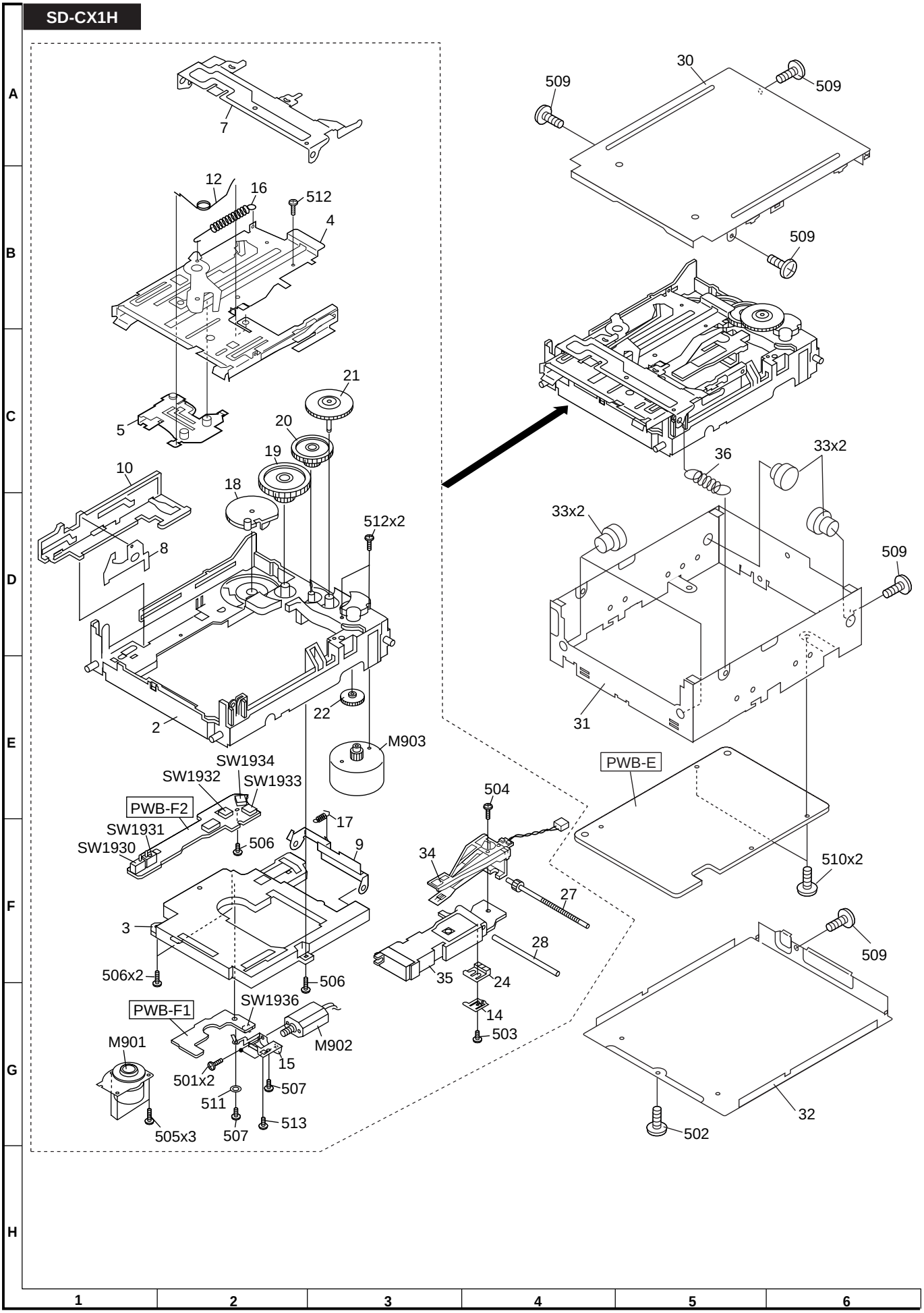


Figure 10 MD MECHANISM EXPLODED VIEW

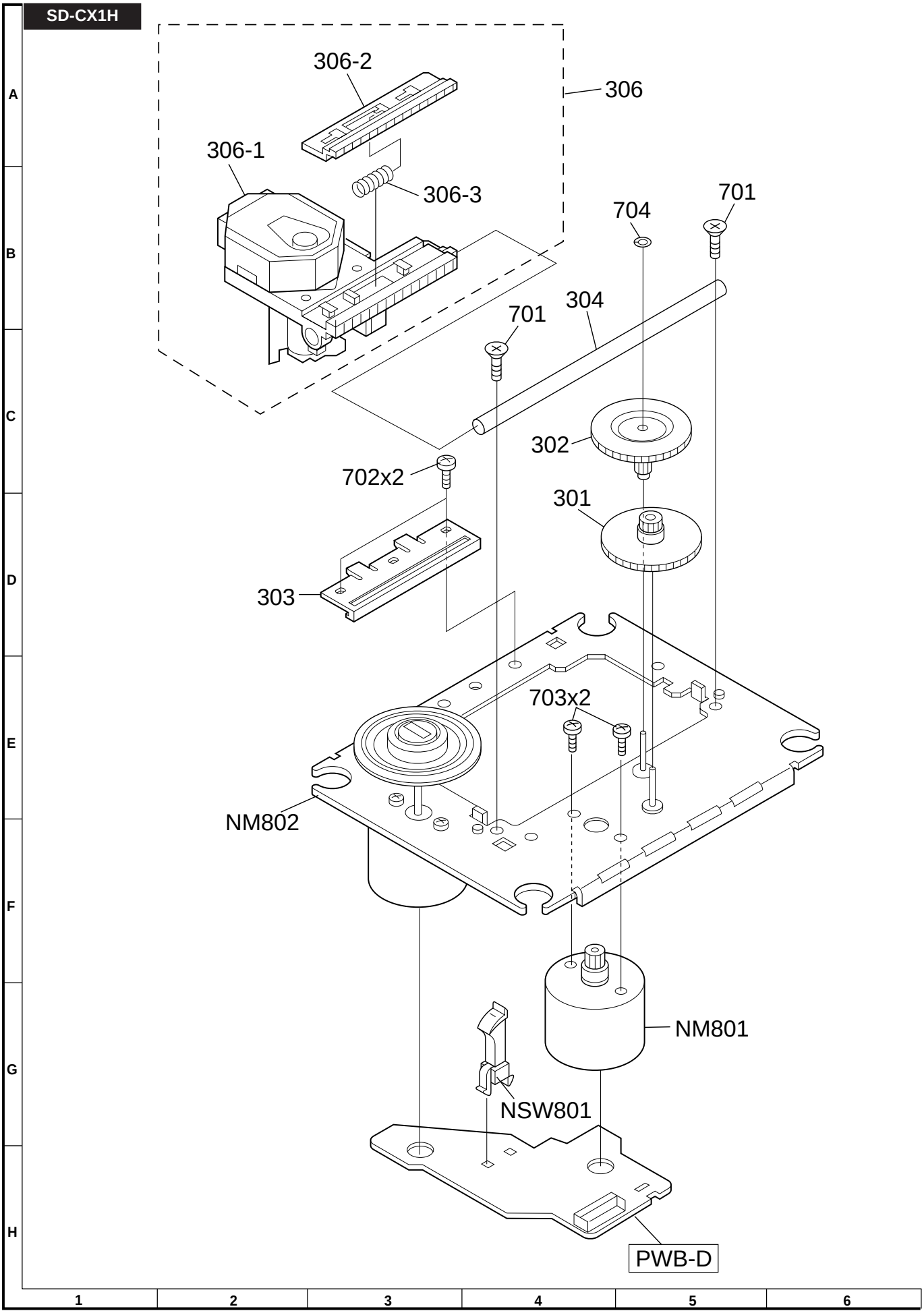


Figure 11 CD MECHANISM EXPLODED VIEW

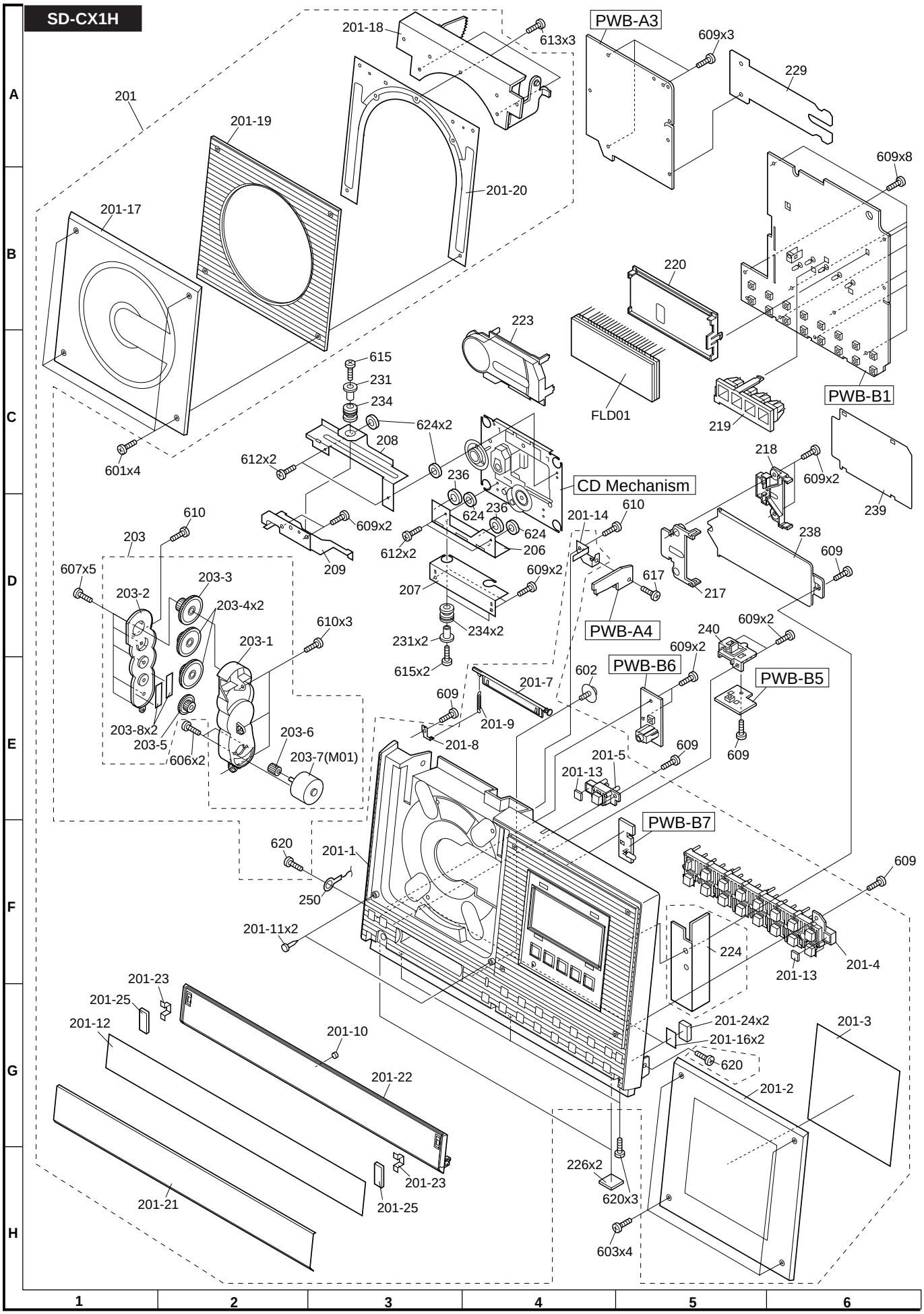


Figure 12 CABINET EXPLODED VIEW (1/2)

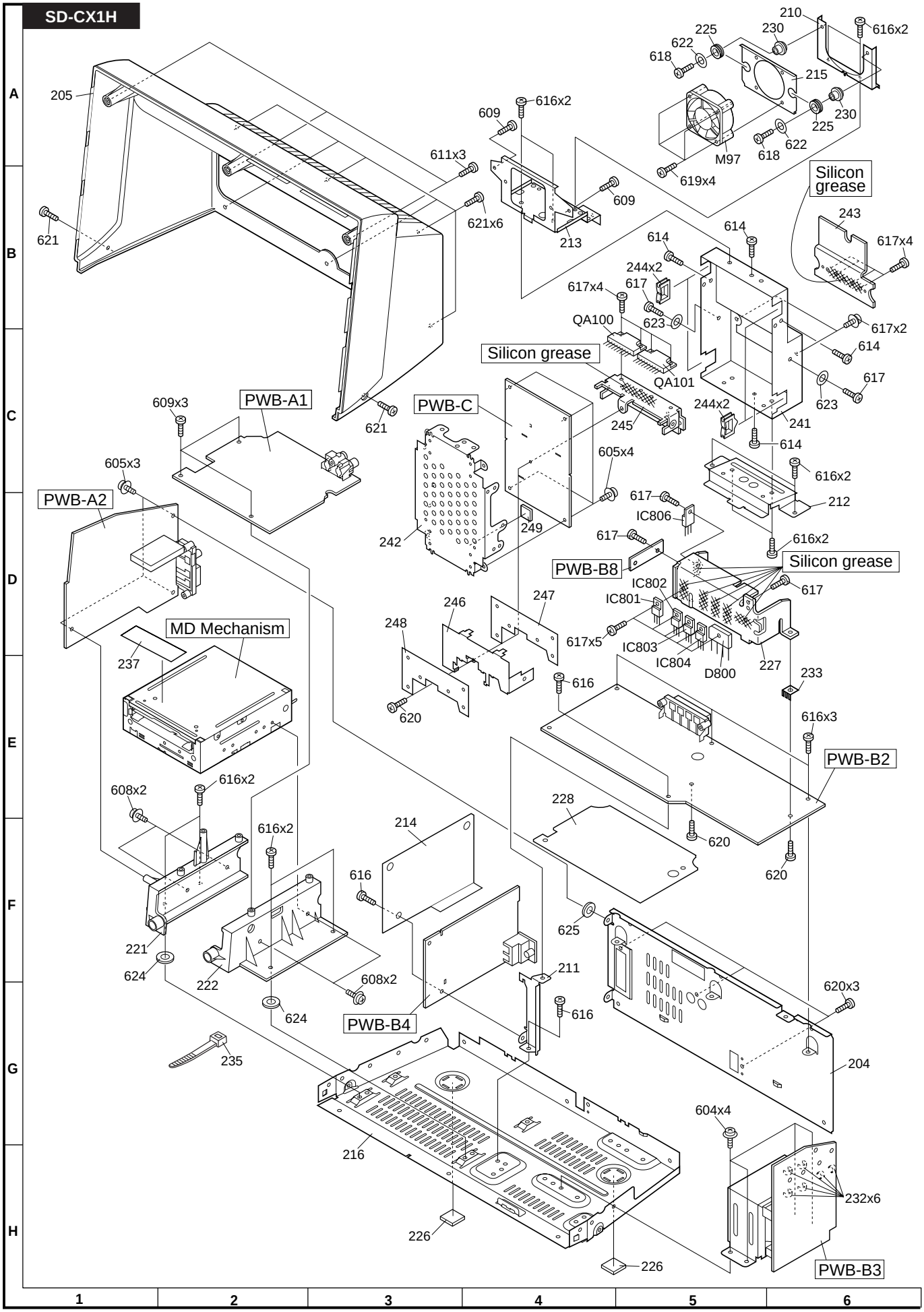


Figure 13 CABINET EXPLODED VIEW (2/2)

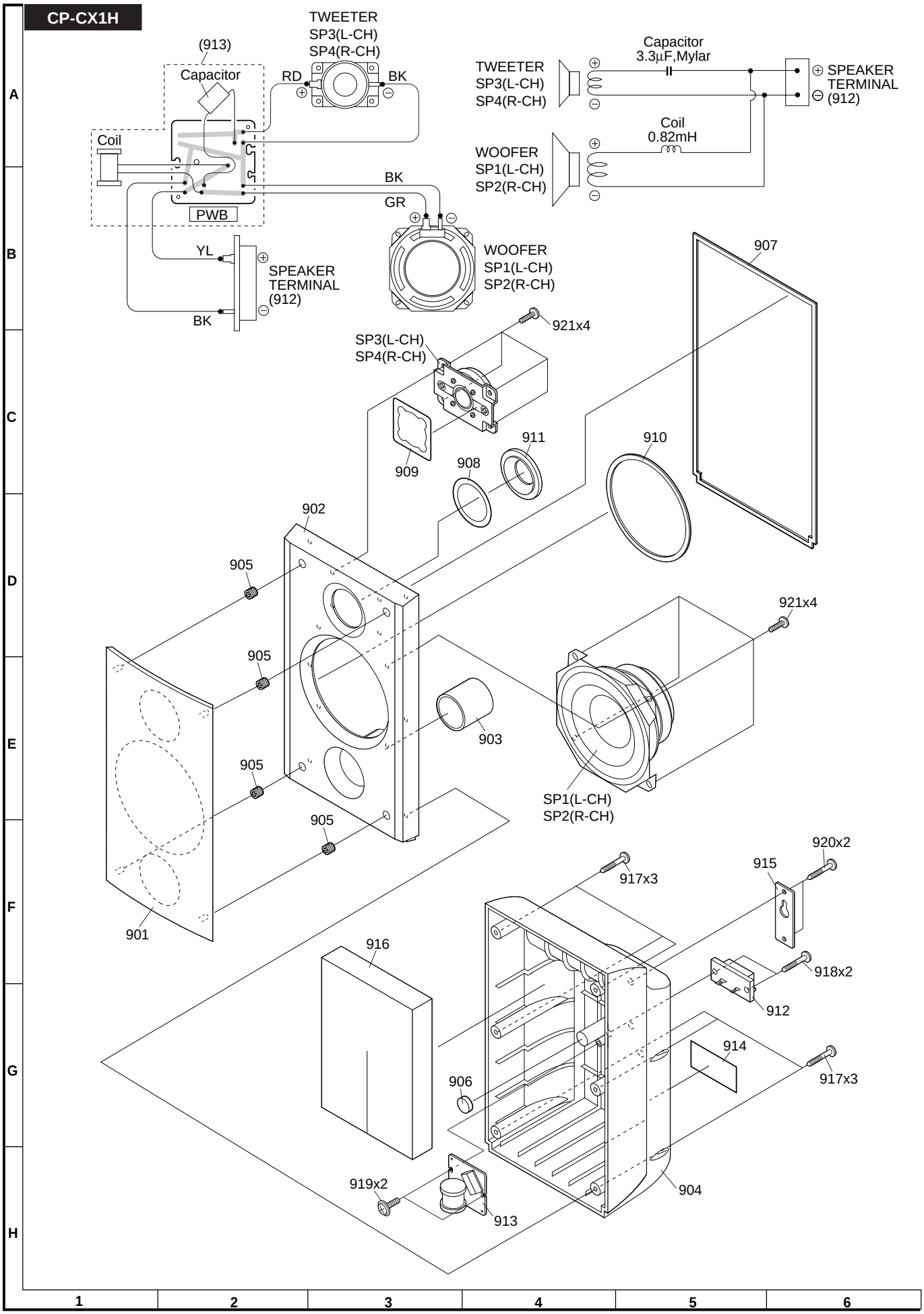
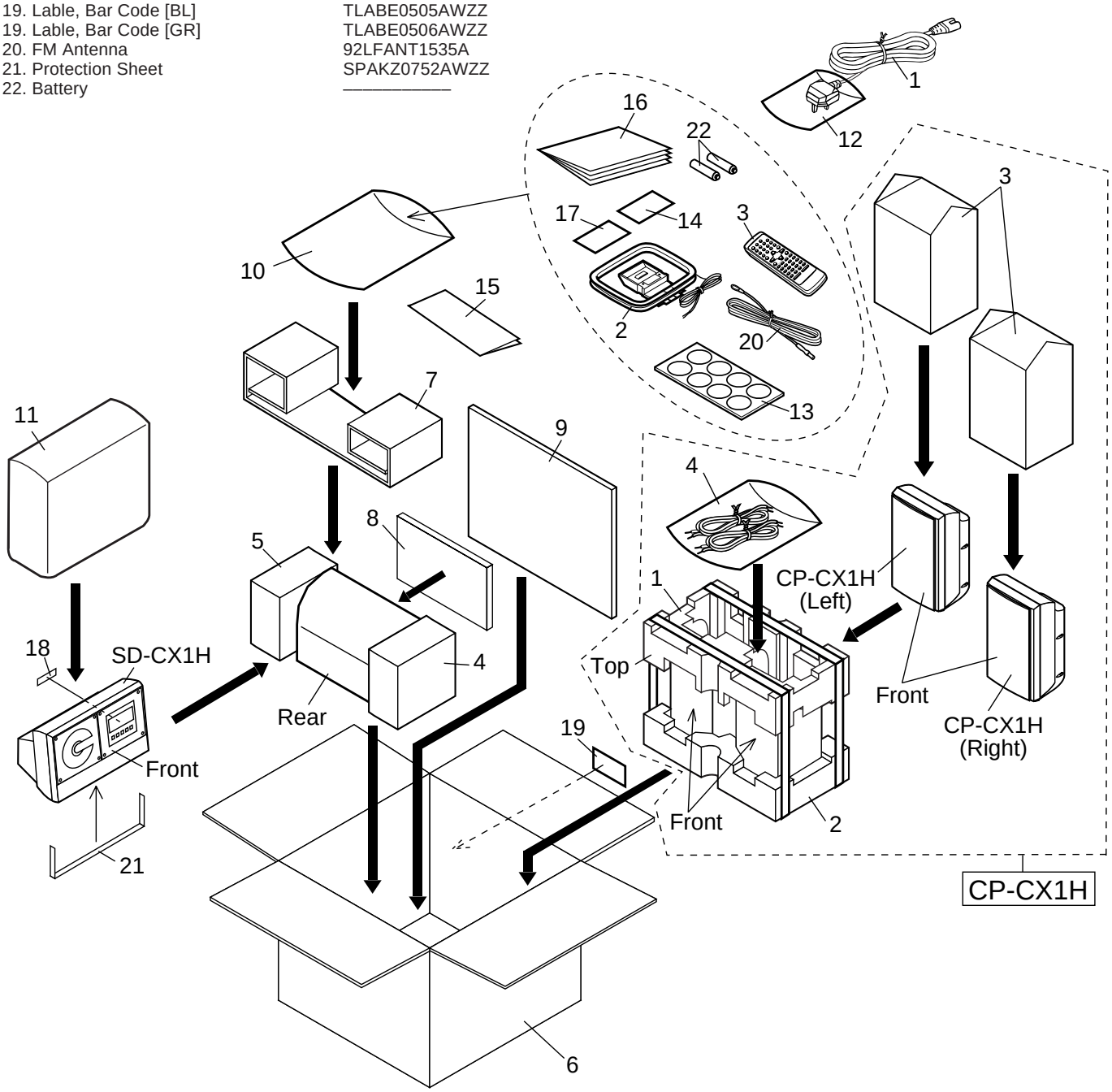


Figure 14 SPEAKER EXPLODED VIEW

PACKING METHOD (FOR U.K. ONLY)

SD-CX1H	
1. AC Power Supply Cord	QACCB0008AW00
2. AM Loop Antenna	QANTL0012AWZZ
3. Remote Control	RRMGC0256AWSA
4. Packing Add., Left	SPAKA0274AWZZ
5. Packing Add., Right	SPAKA0275AWZZ
6. Packing Case [BL]	SPAKC1177AWZZ
6. Packing Case [GR]	SPAKC1179AWZZ
7. Pad, Accessories	SPAKZ0760AWZZ
8. Packing Add., Front	SPAKZ0686AWZZ
9. Packing Add., Center	SPAKZ0693AWZZ
10. Polyethylene Bag, Accessories	SPAKA0007AWZZ
11. Polyethylene Bag, Unit	SSAKH0045AWZZ
12. Polyethylene Bag, AC Power Supply Cord	92LBAG1770A
13. Non-slip Sheet for Speaker x8	92LFB1616
14. Sheet, Fan Caution	TCAUZ0091AWZZ
15. Warranty Card	TGAN-3170UMZZ
16. Operation Manual	TiNSE0352AWZZ
17. Quick Guide	TiNSE0353AWZZ
18. Label, Serial Number	TLABN0112AWZZ
19. Lable, Bar Code [BL]	TLABE0505AWZZ
19. Lable, Bar Code [GR]	TLABE0506AWZZ
20. FM Antenna	92LFANT1535A
21. Protection Sheet	SPAKZ0752AWZZ
22. Battery	————

CP-CX1H	
1. Packing Add., Top, Speaker	92LPCE02221APA
2. Packing Add., Bottom, Speaker	92LPCE02221APB
3. Polyethylene Bag, Speaker	92LTB693
4. Speaker Cord Ass'y	92LFB1590



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